ZOO PUBLISHING

Issue026 October 2007 $4 / €3.25 / £2.25

# 3D Creative

# INSPIRING ARTISTS

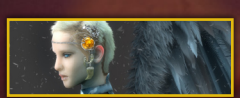
From this month's interviews, to the galleries and the tutorials, everyone can find inspiration in this month's mag...



## Articles
Product Visualisation & "What inspired you to become an artist?"



## Interviews
The Light Works



## Galleries
Geoffrey Reynaud, Rebeca Puebla, Khalid Abdulla Al-Muharraqi & More



## Making Of's
"Night of the Cat" by Cristian Mihaescu & 'Cheese Plater' by Hau Ming (Jamie) Li



## Tutorials
Environment Lighting, Layer Texturing & ZBrush Character Creation

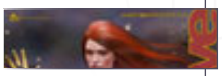



## Editorial

Welcome to Issue 26. This month we have an interview with The Light Works, based in Germany. They produce sci-fi renders and much more for the sci-fi TV and film industries. We hope the interview will give you an insight into the kinds of paths that can be followed once you've learnt that 3D package and are looking for somewhere to apply your knowledge and skills. We have backed this up with a piece about Janne Hellmann's latest product visualisation project for Mechanik Watches. Janne talks about his processes and his workflow in producing stunning photo-real renders for customers to build their custom watches online. If you've ever struggled organising a project then this is well worth a read as Janne has some really helpful hints and tips!

PLUS, this month you have your chance to win one of 5 free 12 month subscriptions to 3DCreative by taking part in our quick survey! You can join the survey here: 3DCreative Survey. Another great issue, if I do say so myself! Enjoy!! Ed.


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What's In This Month...



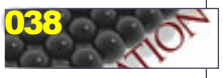
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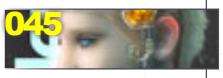

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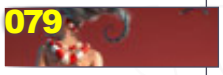

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Project Overview by Hau Ming (Jamie) Li




## Recruitment
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## Magazine Viewing Tips

For optimum viewing of the magazine it is recommended that you have the latest Acrobat Reader installed. You can download it for free here: DOWNLOAD NOW

To view the many double page spreads featured in 3dcreative magazine, you can set the reader to display 'two-up' which will show double page spreads as one large landscape image:

>> 1. Open the magazine in Reader.

>> 2. Go to the 'View' menu, then 'Page display'

>> 3. Select 'Two-up Continuous' making sure that 'Show cover Page' is also selected.


## Editor
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## Assistant Editor
Warin Pismoke

## Layout
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Alex Price
Bobby Brown

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Lynette Clee

## Content
Tom Greenway
Lynette Clee
Warin Pismoke
Richard Tilbury
Chris Perrins


## Free Stuff!

Wherever you see this symbol, click it to download resources, extras and even movies!



# Contributing Artists

Every month, many creatives and artists around the world contribute to 3DCreative Magazine. Here you can read all about them! If you would like to be a part of 3DCreative or 2DArtist Magazine, please contact: ben@zoopublishing.com

## 3D Environment Lighting

These wonderful people are responsible for creating our new 3D Environment Lighting Tutorial series for 3ds Max, Cinema 4D, Lightwave, Maya & Softimage XSi. Most of them have been with us since the Joan of Arc series and worked on the highly popular Tuc-Tuc series...





## Florian Wild



Otherwise known as "Floze" since kindergarten (even by his Grandma), started CG when he was eight, with Dpaint & some very basic 2D animation software. He wanted to create fabulous worlds, such as the ones he discovered in games like Monkey Island, Le-Chuck's Revenge. He started 3D when he was 15, & got into the industry at 18. He currently works as a buccaneer Artist & TD.

mymail@floze.de http://individual.floze.de/

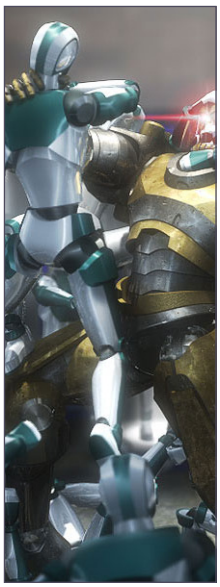


## Luciano Iurino

Started back in '94 with 3DStudio on MS-Dos as a Modeller/Texture Artist. In 2001, he co-founded PM Studios and still works there as Lead 3D Artist. They recently developed the videogame "ETROM – The Astral Essence". He also works freelance for magazines, web-portals, GFX & videogame companies. He recently left the 3DS Max environment to move on to XSI.

iuri@pmstudios.it





## Giuseppe Guglielmucci



Is a Freelance 3D Modeller/Animator. He began using computers with the epoch of the vic20 & Cinema4d was his 1st 3D software. He started working in the field of CG in 1999 in Commercial Design. In '03 he worked on "ETROM - The Astral Essence", an RPG video-game for PC, developed by PMstudios. He currently hopes to work in the video-games industry & develop his own game.

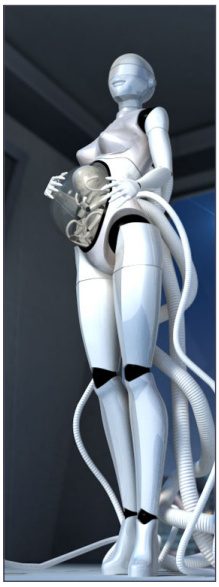
piko@pikoandniki.com www.pikoandniki.com



## Niki Bartucci

Is a Freelance 3D Modeller, in Italy. She started working in the field of Computer Graphics in 2000 as an Illustrator & Web Designer. In 2003 she started using 3D software, such as C4D & 3DS Max. In that year she worked on "ETROM - The Astral Essence", an RPG video-game for PC, developed by PMstudios. She is currently a freelancer, specialising in commercials.

niki@pikoandniki.com www.pikoandniki.com



## Would You Like To Contribute To 3DCreative Or 2DArtist Magazine?

We are always looking for tutorial artists, gallery submissions, potential interviewees, Making Of writers, and more. For more information, send a link to your work here: **warin@zoopublishing.com**.

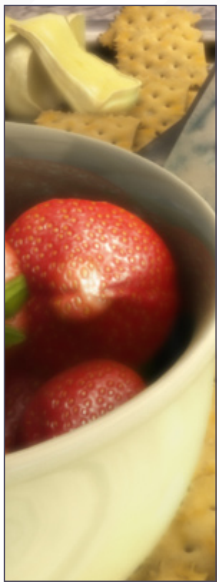


## Roman Kessler

Is a Freelance 3D Artist, in Germany. In '93 he made his 1st 3D model, using a shareware 3D software for DOS that was very limited. He got addicted & started with Lightwave in '97. Since 2005 he has worked professionally as a Freelancer. He likes all 3D tasks equally, with little preference to modelling and texturing. Besides client-based work, he also works on personal animation projects.

www.dough-cgi.de





## Hau Ming (Jamie) Li



Modeler & Texture Artist, Florida. I took my first and only Maya course in Buffalo and I found myself sitting in front of the computer a lot. At the time, I was trying to teach myself character modeling with limited resources. Later on, I found a school in Florida that suits my current needs. I am a month away from getting my Bachelor degree and I hope to find jobs in film, commercials and games.

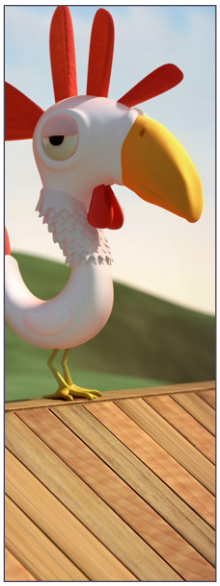
tvholicjames@gmail.com www.haumingli.com



## Cesar Alejandro Montero Orozco

Is a 3D Artist & Computer Engineer, in Zapopan, Jalisco, Mexico. He believes in the balance in life and all of its aspects, and he appreciates his health above anything else. His career goal is to tell compelling stories using CG in feature films.

montero@archeidos.com
www.archeidos.com






## Janne Hellmann



Is a Freelance 3D Artist in Blomberg, Germany. He is 30 years old and spends about half of his life on Cinema 4D. At first it was just a hobby whilst he served his apprenticeship as a carpenter. For the last few years he has worked as a freelancer on 3D-Visuals, and for the last few months he has been using FinalRender.

www.b-w-design.de
info@b-w-design.de



## Cristian Mihaescu

I'm a PhD lecturer at The Music Academy of Cluj (România). I compose electronically music and also I love to create 3D digital graphics and to illustrate cover books and photography. My main tools are Blender, Vue Infinite, Poser, Inkscape and the Gimp that I use to create cartoon, fantasy and SCI-FI in most of my scenes.

cristian.mihaescu@gmail.com



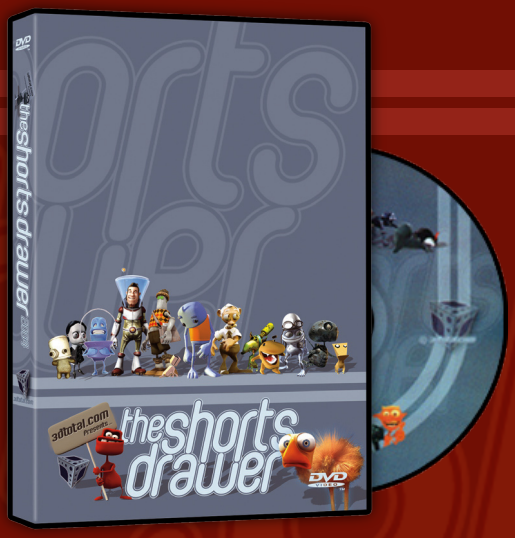
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# the shorts drawer

## Introduction:

A Collection of the finest independent animated movies and commercial trailers. The DVD includes work from a whole number or different sources, such as students, independents animators and commercial studios. We want people to be able to view this wealth of elite animation in one convenient high resolution package whilst generating much exposure for these talented artists at the same time.



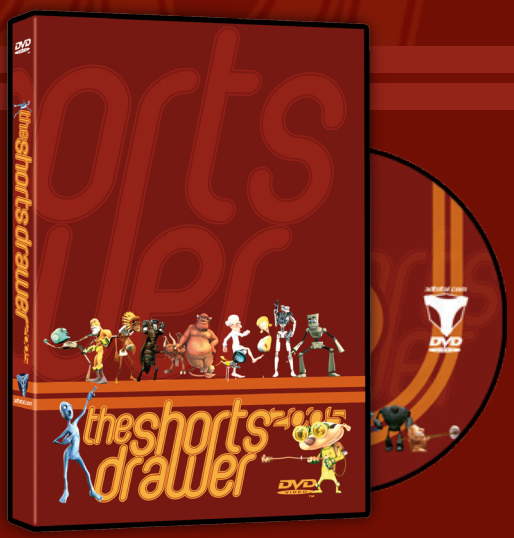

## the shorts drawer 2004

- Running Time: 3hrs 8 mins
- 27 Shorts movies
- 6 Clips & Trailers
- Region Free, NTSC & PAL versions
- Shorts & trailers from artist and studio like:
  Blur Studios
  Brian Taylor
  Marco Spitoni
  Patrick Beaulieu
  & Alex Mateo



## the shorts drawer 2005

- Running Time: 3hrs 8 mins
- 27 Shorts movies
- 3 Trailiers
- Region Free, NTSC & PAL versions
- Shorts & trailers from studios such as:
  Blur Studios
  Keytoon Animations Studios
  Redrover Studios
  & Platige Image
- Loads of extra including images and storyboards




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# THE LIGHT WORKS



The Light Works is a team of commercial artists and computer specialists who have been actively involved for more than 15 years in the computer graphics industry. We spoke to Tobias Richter about the future of the company...

"I HAVE BEEN A SCI-FI FAN FOR A LONG TIME, AND MOST STUFF IN THE BEGINNING I MADE SIMPLY FOR MY PERSONAL ENJOYMENT..."

THE LIGHTWORKS

They use Maya for the development of graphics and animations; which is at present, for them, the most successful and complete software within the visual effects and character animation area. They aim to create concepts which are then precisely and efficiently converted into the finished article, and always on time! Light Works can create photo-real special effects, full 3D scenes and environments and virtual characters, as well as services such as compositing, logo designs, visualisation, video for TV and film, multimedia services, and even computer game creation!



© The Light Works & Atari. 'Boiling Point : Road to Hell'

**Hi Tobias, thanks for talking to us.** Thanks for having me... **Did we miss anything in the introduction? You guys offer so many services!**

Well, yes, sort of... That's the broader scope of things we can do. As with most smaller studios, some of the services we offer are done in cooperation with other companies. Our core team is specialised in three areas; the biggest area of them being game content creation, that is



© The Light Works & Atari. 'Boiling Point : Road to Hell'

In-game 3D elements, characters and cut scenes. Aside from that we do visual effects work for TV and films, and as a third area we create industrial animations. It's still a large ground, but that's part of the fun and the challenge - always trying something new and exciting.

How many of you work for Light Works?

Our main team consists of 6 to 8 people, plus one or two interns. Depending on the amount of workload we have, we also work with a couple of freelance studios. Most of them are good friends and started their career with us.





**And is the business growing, or are you staying as you are for the time being?**

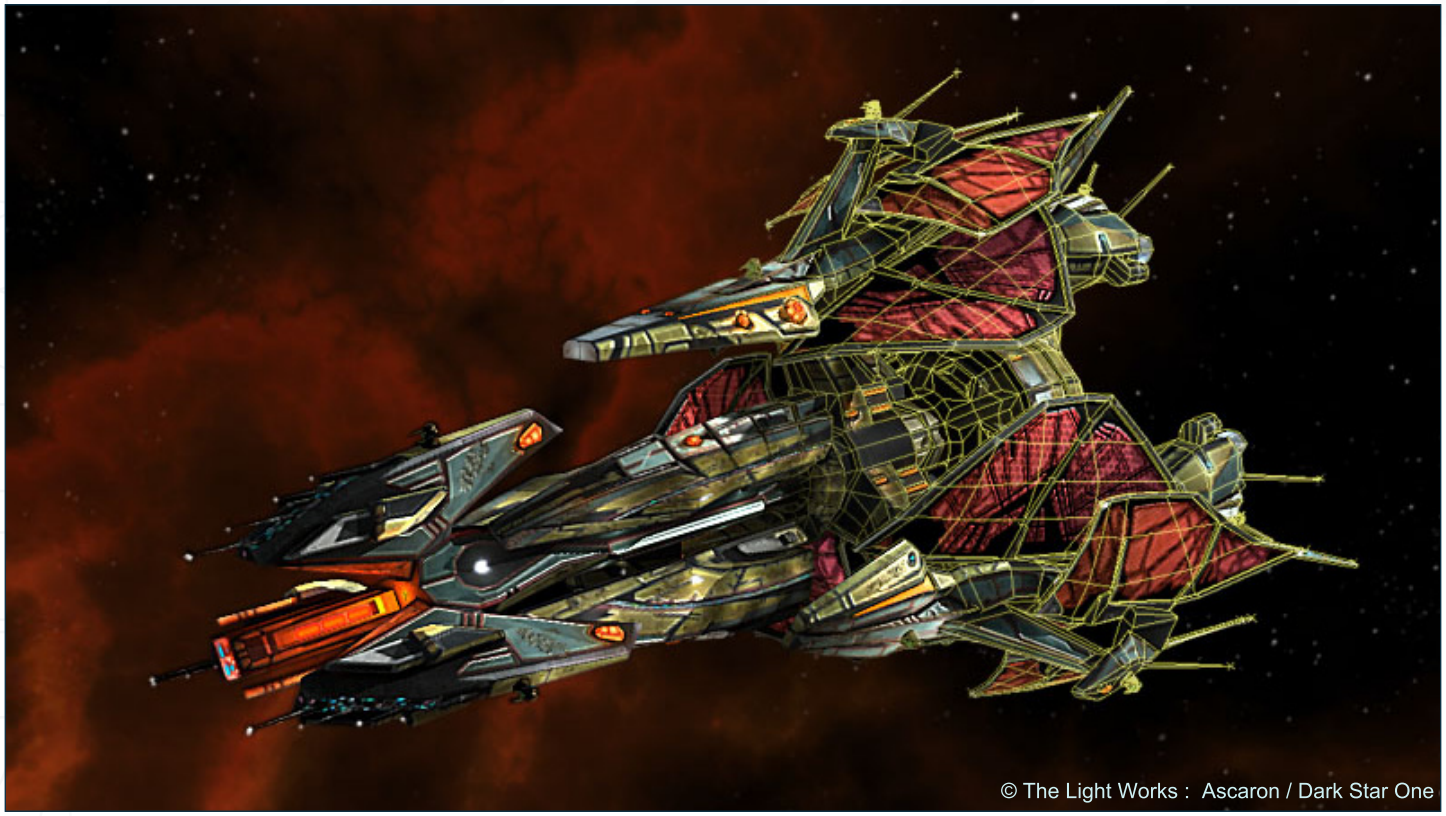
When I started out around 17 years ago (geez), I was on my own. Over the last 10 years, every one or two years another artist has joined the team, so that's a pretty steady and healthy growth rate. I've seen other companies grow big-time with hundreds of artists, and then they have gone very quickly. Thankfully, the business has been growing steadily over the last three years; we have a pretty good customer base and so don't need to do aggressive marketing - which is not my thing.


© The Light Works & X3-Reunion / Egosoft

**Your work is very heavily biased towards the sci-fi genre. Is this a direction you intended for the company, or is that just the way the work has been offered to you?**

That is mostly because of my personal


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© The Light Works : Ascaron / Dark Star One


© The Light Works : Soeldner - Marine Corps Wings Simulations


© The Light Works : Soeldner - Marine Corps Wings Simulations

time, and most stuff in the beginning I made simply for my personal enjoyment. Since most of the work I had to show to potential clients was sci-fi related, a lot of them wanted that. So one thing led to another... Right now, we have a much broader scope, but sci-fi is still my favourite.

**And are you a Star Trek fan? If so, this must be a dream job for you?**

There's no point in denying that Star Trek is my "Number One" in sci-fi. Most of the stuff I created in my spare time was related to that, actually. In almost every 3D program I've worked with, the first thing I would build was an Enterprise. It started with Videoscape (pre-predecessor of Lightwave), editing 1000 3D points and triangles (that was the maximum the software could handle – around 1990) with a text editor... Ultimately, all that Star Trek stuff I did led to a long term cooperation with Paramount Home Entertainment in Germany, and with the Federation Convention, who organises the biggest European sci-fi convention. For almost a decade I created a short movie for each of their opening ceremonies. So yes, this is still my







dream job; I still have a lot of fun doing what I do and couldn't imagine doing any other work for a living.

What has been  a favourite project for you so far?

It's hard to name one specific project. I always enjoy working on the current project and try to get the best results for that. Thanks to the rapid development in computer graphics, each project looks better then the last one. This is especially evident in computer games. So the more recent projects are always my favourite. Right now, those would be "Sacred 2", where we do a lot of the in-game elements, building high-end normal-mapped models, and "Lair", where we helped our good friends at Factor 5 again with their spectacular in-game cut scenes.


In Honor Of Those Who Boldly Go



What is your production pipeline like? Do you all work on a project or do you assign each other individual projects top work on?

Most of the artists working here are all-round artists; some are a bit more specialised than others, for example in doing character work or environmental work. In such a small company it is not possible to have the kind of work separation and specialisation that you have and need in bigger companies. I for one think it is part of the job and part of the fun to learn and experience as many aspects as possible. This keeps things fresh. If you do the same thing day in - day out, it can wear you out. I've noticed that, if a job takes longer then a year to complete, you start to do things more mechanically. So a constant change in projects, genres and tasks is a good measure against that.





What advice would you give to anyone starting a similar business to yours?

Starting a career as a CG artist is mostly about talent and experience. Most companies will judge you by the quality of the work you've done so far - not so much by any degree or diploma you might have (that sometimes helps, but is not necessary). It's the portfolio that gets your foot in the door. I think for starters it's best to test and learn as much as possible, which involves a lot of personal work in your spare time. Your demo reel or portfolio should cover a large array of things: include more stuff of the things you like to do most (like characters, photorealistic stuff, animation, and so on). And quality reigns over quantity! If I see two mediocre pictures and one cool image, I'd rather invite the one with the





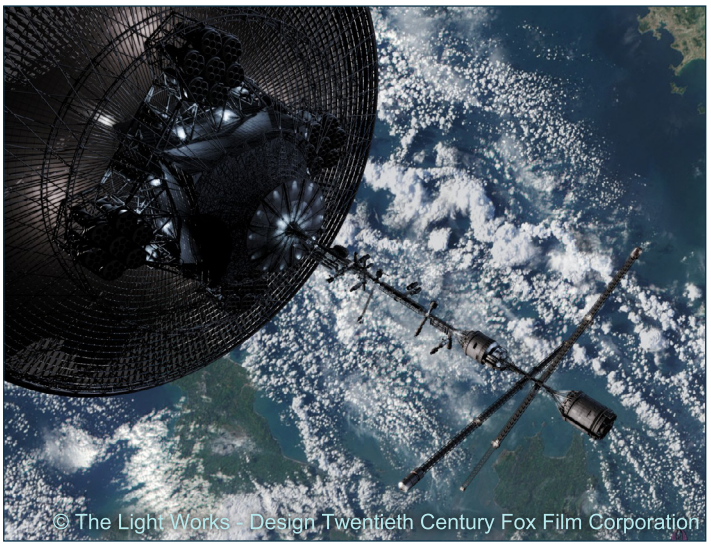
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© The Light Works - Batman - Dark Tomorrow - Kemco


© The Light Works - Nydenion


© The Light Works - Great War of Magellan - Attack run sequence


© The Light Works - Design Twentieth Century Fox Film Corporation

cool image to the interview. Once you have your first job or internship and you're good at what you do, things should work out for themselves.

Thanks very much for talking to us and good luck for the future.



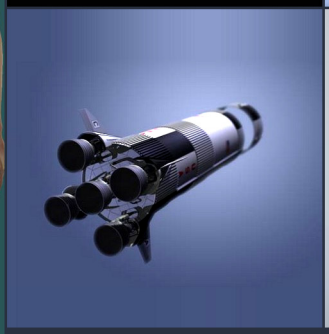


# Tobias Richter

For more work by this artist please visit: www.thelightworks.com Or contact them at: info@thelightworks.com Interviewed by: Ben Barnes







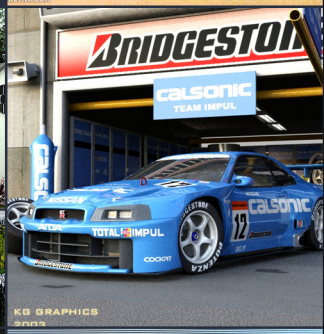



# 3d02.COM
## The Finest 3d Model Store

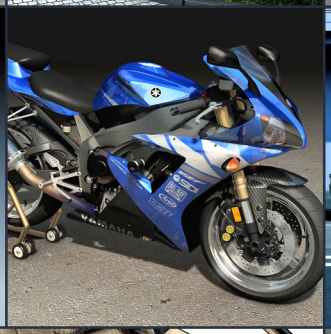
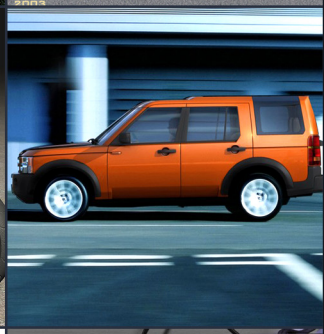
3d02.com. Commonly known as a high quality 3d model store, one of the premier stores of digital assets offering ready to use CG 3d models, and an open platform allowing artists to publish and sell their 3d models online

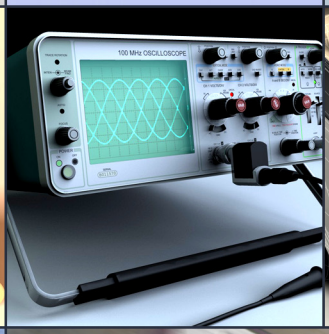




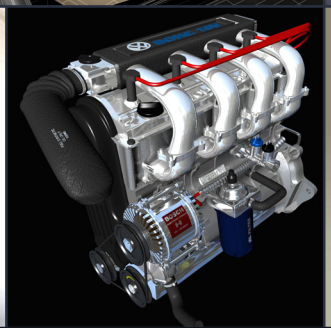










# ANIMATIONMENTOR.COM

## The Online Animation School™

"Getting to spend my day creating peformances and bringing characters to life is so incredibly awesome, and I can't believe I get to work on such a cool project straight out of school. I'm so glad I had the opportunity to learn character animation in such a challenging and supportive environment."

**- Aja Bogdanoff**
*Animation Mentor Graduate*
*Blue Sky Studios*







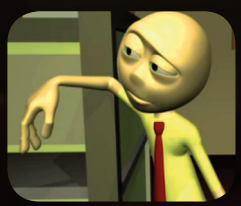




"There is no better motivator than knowing that your work can be seen by more than 600 people each week, including some of the best animators in the industry. This, paired with the contagious enthusiasm of my classmates, the mentors and the Animation Mentor staff pushed me to always do my best work!"

**- Mike Stern**
*Animation Mentor Graduate*
*DreamWorks Feature Animation*





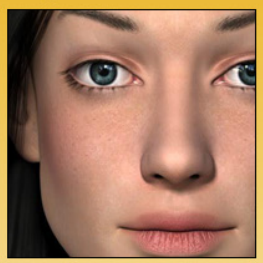


AnimationMentor.com is an 18-month online animation school for students who are serious about an animation career. The program is designed and taught by professionals, working at the top animation studios in the industry, focusing 100% on character animation. Our online campus is built with a production studio focus and provides a unique and special community of both students and instructors from all over the world who have one passion in common -- animation!

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Over 93,000 3D resources!

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Expires 10/31/2007

# THE 3D STUDIO

## www.The3dStudio.com




# Product Visualisation

Janne Hellmann is a 3D artist who recently undertook a brief to create 3D visualisations of a collection of watches for a client. Here, Janne tells us all about the project and how he went about creating these great renders...

"My client wanted to make an extraordinary online shop with a unique '3D-configurator-system'."

Product Visualisation

## Inspiration

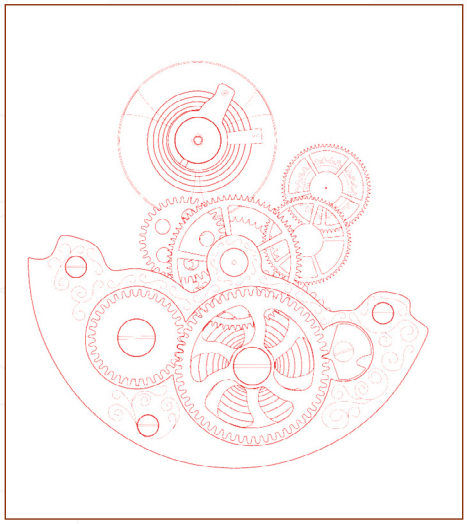
My client has an online store for mechanical watches and had a photographer take pictures of his watches. The photographs weren't good enough so he decided to go for another, more flexible option. My client wanted to make an extraordinary online shop with a unique '3D-configurator-system'. With this system, you are able to configure your own watch. You can choose the hands, clock face, and the wristband. You then get a real time (pre-rendered) 3D view of your selection, and a 360° rotation with 8 single frames so that you can see your selection from every side.



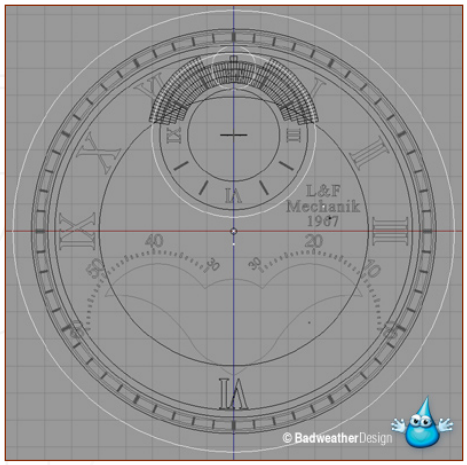


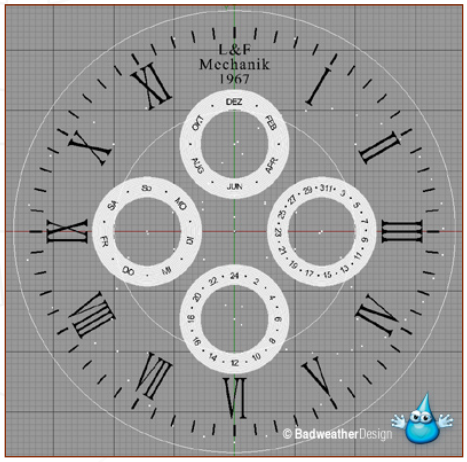

## Software

For about fifteen years, I never used any other renderers, or other 3D software, besides Cinema 4D. I always wanted to do everything using Cinema 4D's renderer. It worked fine for me, but if you truly believe this then I think perhaps you have never used blurry reflections, refractions or caustics, or all of them together with GI - maybe because you don't have enough time or just don't want to spend too much time on something. These nice effects that you have possibly never used can actually help to create photorealistic images, which is rather sad I think. I then saw something in a forum that was rendered with finalRender. I thought, okay, it was a nice renderer (like Maxwell and the like), but I decided to visit the finalRender website, and what I saw there I just couldn't believe! The renders were so damn realistic!! Some of the renders had stamps with render times on them; I took a look at the description of finalRender and checked out the render speed... could it be true? No way! I thought that such a fantastic render speed would only be possible in five years maybe, because the hardware would need a few years to become this effective! So I searched the web for finalRender, and every time I saw such wonderful render times. I found out that Peter Hoffmann uses finalRender. I knew Peter from a forum I was always on, so I decided to ask him if all





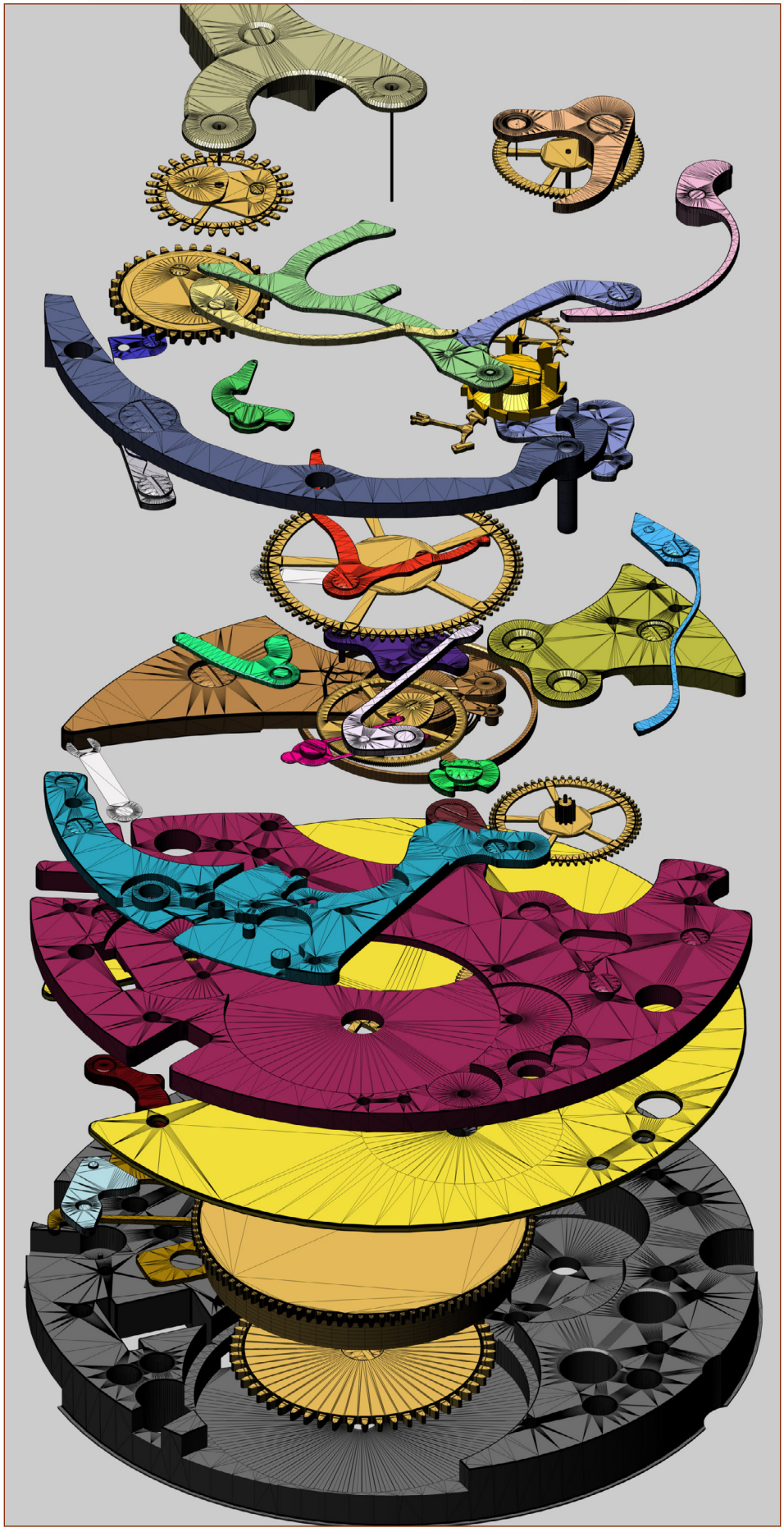


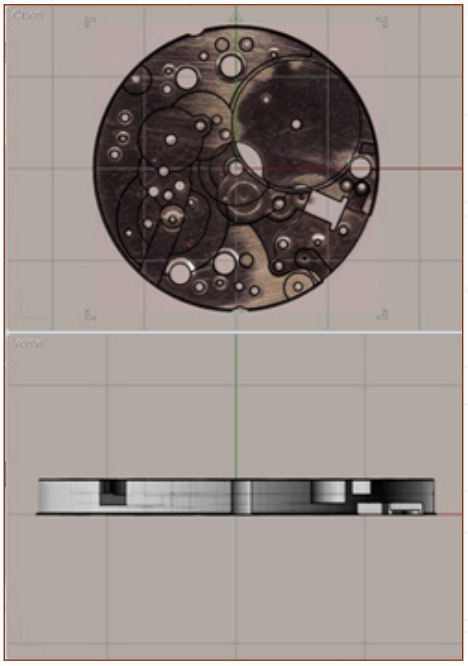



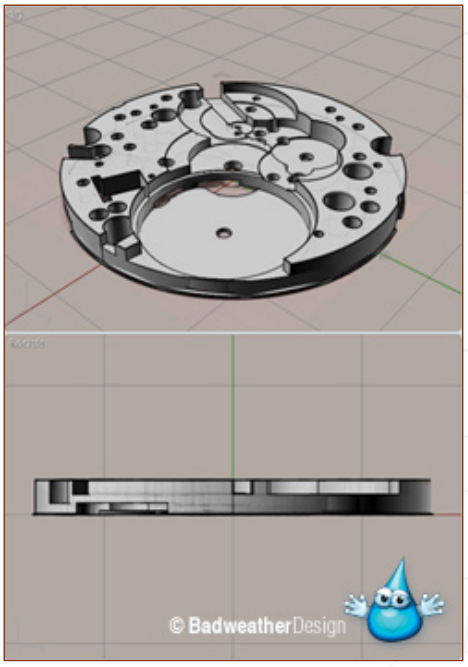




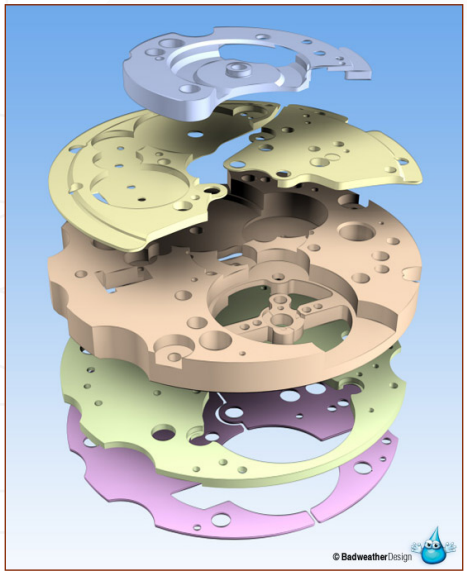
of this could be true. Sadly it took a few days until I received an answer, but within these few days I had already bought finalRender. After a very quick installation I started Cinema 4D and took a look in the Effects tab, under Render settings, and there it was! What an impressive moment!! Immediately, I called a good friend so that he could assist me with my very first tests. We had so much fun! For about four or five

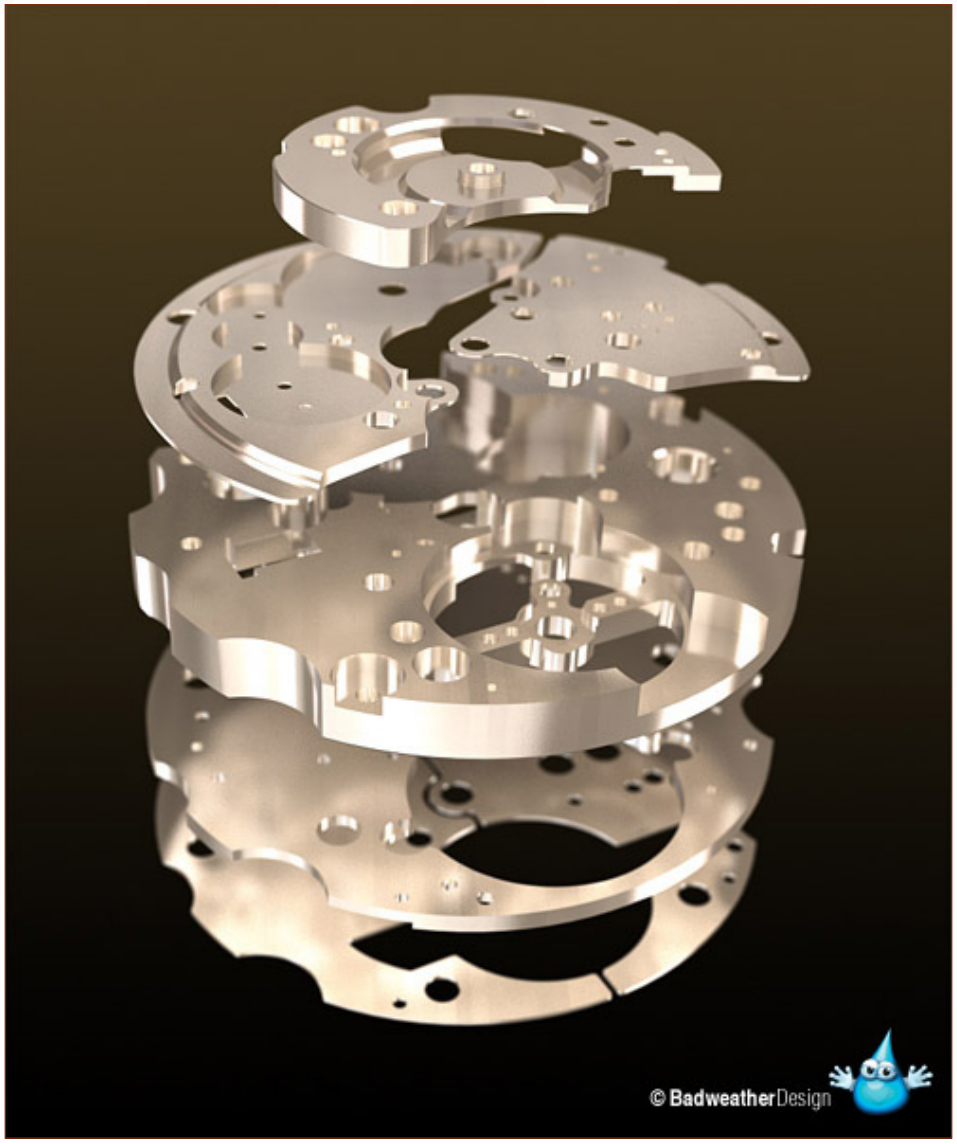







minutes I wasn't able to get one rational word out, I could only stumble things like "uuuhhh, ohhh, wwuuuhuuuuuu, yeeeehaaaaaaa". Okay, so why? Well, I created a cube with fillets; cut a hole in it; added sunlight; sphere inside; diffuse reflections for the cube; diffuse reflections and diffuse refractions for the sphere; GI... then started to render. After three seconds it was ready! Three seconds!!! I had never seen this before in my life, and these were only the standard render settings from finalRender. Then I took another look at the AdvancedRender for



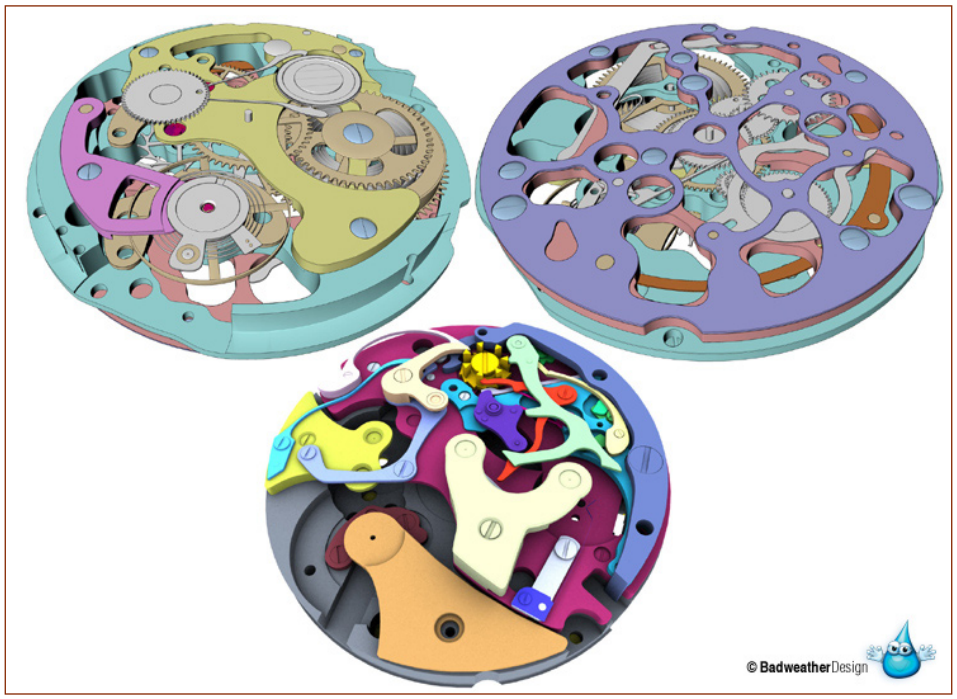




Cinema 4D using the standard settings. And what can I say? After 45 minutes I stopped rendering with an absolutely unusable result. And ever since that glorious day I have used finalRender every day for everything. And I must say it's funny - and a little bit dangerous too - but the first thing I usually do is switch on the GI because it's so damn fast! But hey, you really don't need GI in every situation.

## FINALRENDER

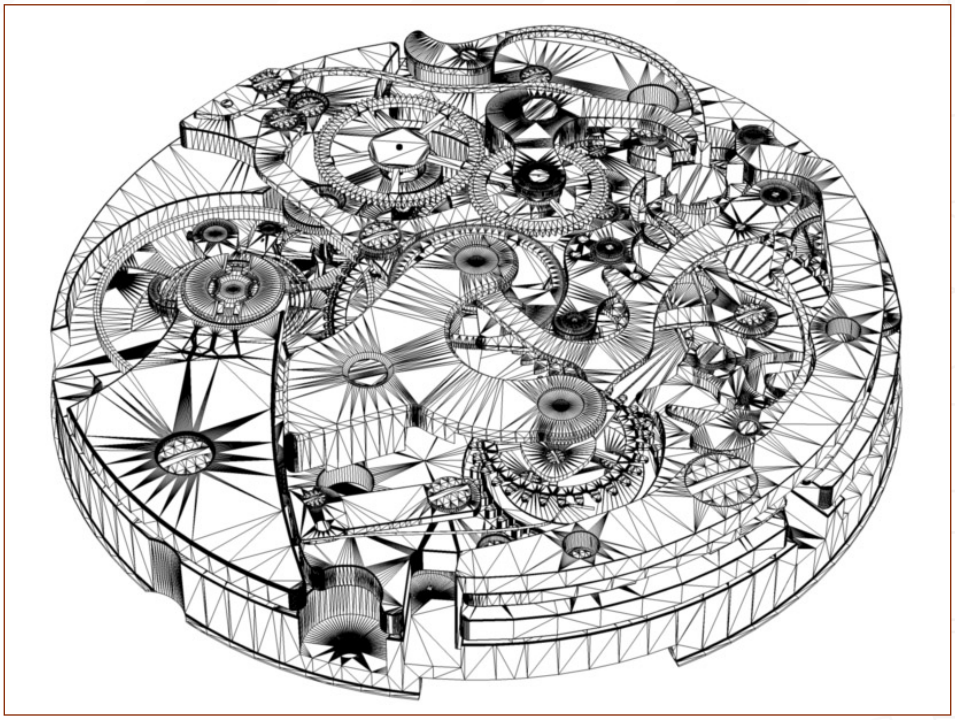
In the majority of cases, I use finalRender materials or, even better, the new Architectural Material. With these materials, I have the



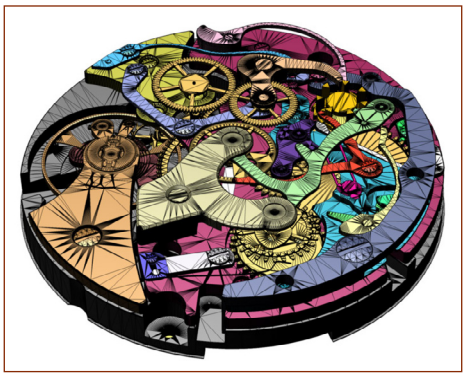

possibility of adjusting them very precisely. Most of them are really simple to use: a little bit of bump, some reflections... There are a few materials that are really complex, like the clock face in the image above, for example. It was really hard to do because it has so many

attributes. But with finalRender it was doable. The whole time I tried to keep the materials and the scene setup as simple as possible. For a single image it wasn't that hard, but doing this for the 360° rotation was sometimes really nerve-racking, and I had to fill the scene with some reflection planes and additional specular lights.

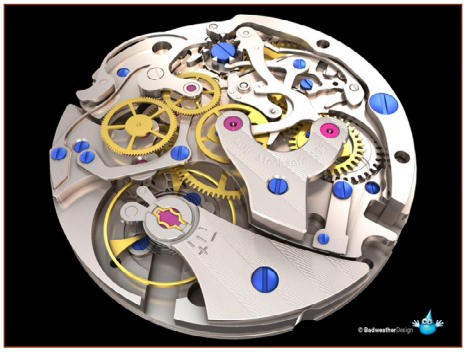


## FEATURES

I think the quality is amazing. With finalRender you have the possibility to adjust the quality very, very precisely. It's simply amazing! The fantastic speed, especially with GI, was also helpful. With this, you develop a real play instinct because it's so fast. One thing I really noticed was the quality of the bump. This is really amazing! It's so clear and accurate, which makes it so much fun to use. In most cases you can't tell if it's only a bump or if it's modelled, and with this you can save a lot of time.







## PROBLEM SOLVING

The most difficult aspect was absolutely the plane objects of the clockwork. If you have nice, round, organic objects you'll get very nice reflections, but if you have lots of plane objects then it's really hard. In one view, everything is quite perfect: it looks like metal. In the next view, where the object has just turned two or three degrees, it's completely black because there isn't anything to reflect. One way to solve this problem is to use blurry reflections, but in some cases you can't use them because the metal must be blank. From here you could go several ways. One way is to place a plane in front of the clockwork, give it a finalRender-Object-Tag, and tell it to only be visible to reflections. It's important that you define a texture in the illumination channel as this will result in some nice reflections. This method is good if you have clockwork with many diffuse reflections. If you had one with clean reflections it might be better to use only a white, self-illuminated plane. If you






are careful not to make the plane too big then it's possible that there would be some reflection from the side, and this could produce some really good results.

## WORKFLOW

The best thing about this job was that I was able to deconstruct every single watch! My workflow changed from watch to watch once I found the perfect procedure: I shot many photos in the same position, removed some pieces and shot a photo, removed some pieces, shot a photo, and so on. Then I printed every photo out to DinA4. From these, I achieved a nice, little flip book. Every single piece which I removed, I put into a little bag and numbered the bag. Then I numbered the sheet with the photo. Every single piece got its own number and I added this number on the sheet, too. I scanned every single piece of the clockwork and underlaid the scanned images in MOI, which is a very simple but accurate and powerful Nurbs-Modeller. Then I took a digital measuring slide and started to measure a piece. I then assigned my measurement to my model. After finishing a piece of the clockwork, I imported it into Cinema 4D. It's better to give every piece its own colour, because when you have about 106 pieces it's possible that you could lose control. Another very, very important thing is that you work with extreme accuracy. If you aren't accurate, you will have many problems doing something like clockwork. If you have 106 pieces that aren't exact, you can imagine what would happen. I modelled the watch cases with Cinema 4D, because in the

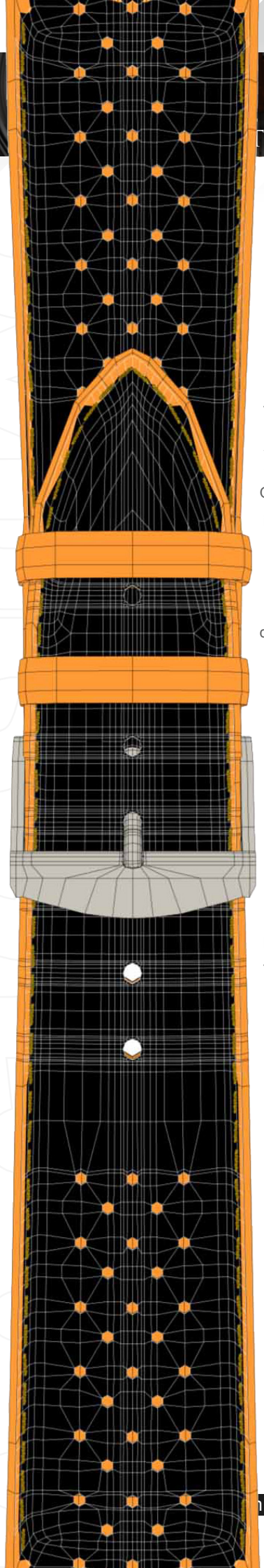


majority of cases I needed some smooth, organic shapes. Most of the wristbands were developed in Cinema 4D, too. I even decided to model the stitching, because if my client ever wanted to make a poster or do something else with these nice watches I can easily create absolutely perfect images without experiencing loss of quality. After modelling, it was best to create a scene setup. The most important thing was the lighting setup. A good way to do this is to light the untextured model. This allows you to see how the light works and if the shadows are good. The lighting in my watch scenes is pretty simple: there are only four Omni lights with Area shadows and an HDRI map, mixed up with another image for the reflections. That's all! In some cases I added some additional specular lights for the wristbands and a few reflection planes for the clockwork. After that I could start creating some nice, little materials. finalRender has everything you need; it really is a pleasure to create materials with it as it's really fast and clean. The new Architectural material is great: fast interpolation for Reflections and Refractions. My dreams have come true! You now have everything you need to create realistic looking materials in a fraction of the time it took before. I decided to create the clock faces in Cinema 4D, too. Normally you would take something like Adobe Illustrator I think, but I don't have that so the easiest thing for me was to do it in Cinema 4D. You could also work in Photoshop by creating everything as real objects, laying them on top of each other, and rendering it in the top view. Using this method you are able to create textures in every size you need, and you are able to create Bump maps, Specular maps and so on. Just give it the material you want; a light grey material for the Bump for example, or a nice coloured one for the Colour maps. Another nice thing is that you can continue to work on the created objects. With this procedure you can be sure that your texture fits your object. Rendering was a very







interesting part too, because I had to render most pieces as single images. After rendering, the images were put together online in the shop. It was a very clean and accurate collaboration between me and the advertising agency, and this fact I have to owe to finalRender.

## Rewards

Oh man, I really wouldn't be lying if I said that the whole project was really fun! And this project was the start for me and finalRender. I bought finalRender only a few days before I started on the watches, which means I only had a few days to learn the new renderer. But it was absolutely no problem at all! The learning curve of finalRender is really great: you can get very, very nice results in a really short time. If you have an idea, you'll certainly be able to realise it with finalRender. Sure, it was a little risky to start a really big project like this with a new software that I had never used before, but retrospectively it was the best decision I could have ever made. If you must learn a new software, you will do it. But I think the most fun is to see the increase of the quality. When I take a look at my first watch renders it's terrifying, as I thought the first renders were really great! Many others thought so, too. But when I take a look at the actual and final renders of the clock, it's really great. I learned so much during this project. But okay, you asked about the rewarding part... I think it was probably the wristbands, because it was so much fun creating them. I achieved really nice, realistic results, and it was a pleasure to do that. One nice thing was the diversity of the wristbands - it really was a lot of fun to see the inventory grow.









## DEADLINE

I didn't have a fixed deadline for this project; my client attached importance to the quality and not to time, which is really rare! However, I must say that the workflow with finalRender is really great, and it helped me a lot, as did the render speed combined with the amazing quality.

## THE FUTURE?

The watches will grow. My client will change his range of products and that will mean there will be some new watches... Then there will be many Arch-Viz images, most of which I will create for a carpenter. I will also be doing more product shots. At the moment I am also creating a new free model database with the focus placed on quality. There will be many finalRender optimized models, with most of the models able to be used in Arch-Viz. All of these models will be ready to use in Cinema 4D. Just download, load it into Cinema 4D, place it and render it. If you want to visit the site, just click on this link **www.cg-vitality.de**. It will take some time for the site to be fully complete because I have a lot to do. If you don't care to visit day after day, you can simply subscribe to my newsletter. That way you will be notified when I launch the site!






# JANNE HELLMANN

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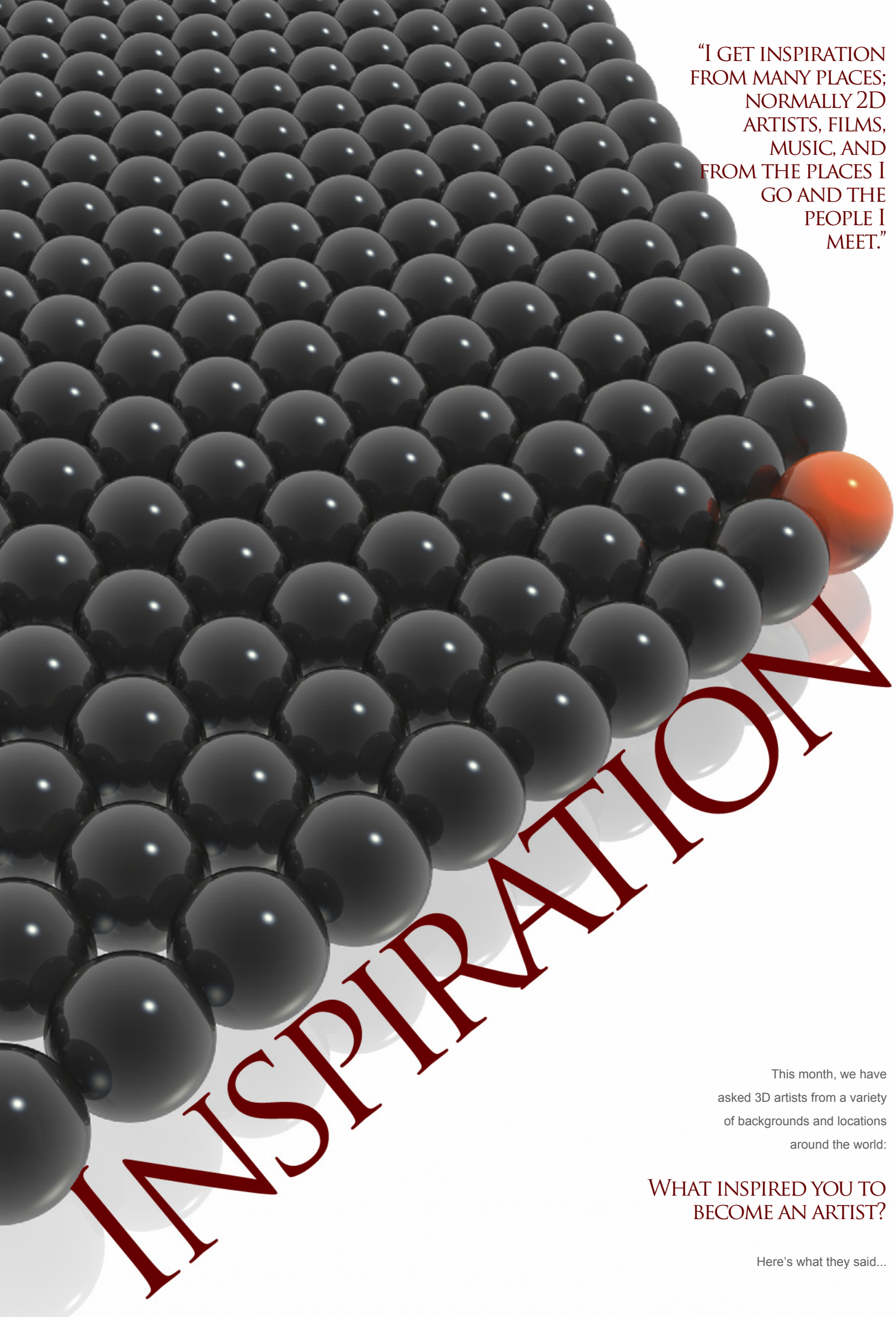
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# INSPIRATION

"I GET INSPIRATION FROM MANY PLACES; NORMALLY 2D ARTISTS, FILMS, MUSIC, AND FROM THE PLACES I GO AND THE PEOPLE I MEET."

This month, we have asked 3D artists from a variety of backgrounds and locations around the world:

## WHAT INSPIRED YOU TO BECOME AN ARTIST?

Here's what they said...

# Inspiration

## Adrian Baluta

**VFX Artist & animator, Dacodac Studio**
Bucharest, Romania
"Great 3D work from artists around the world."

## Ali Ismail

**Digital Artist, Lucasfilm Animation,** Singapore
"The feeling and good time I have when I am working on a project."

## Anders Lejczak

**Project Manager, Framfab,** Malmoe, Sweden
"I don't see myself as an artist yet, but I find the artistic aspects of things more meaningful with the older I get, and the tangible stuff (like technology) less meaningful. A paradox maybe…"

## André Holzmeister

"I believe that I was born an artist. I don't remember a time when I did not draw. I developed my skills to get better and better; I am never satisfied with my art and I am always studying."

## Andre Kutscherauer

**3D Designer, Studio Messslinger Gmbh**
Munich, Germany
"The freedom of thought; the detachment from reality; the artistic license."

## Anna Celarek

**Student,** Vienna
"Ever since kindergarten, some people have told me that I have a talent for drawing. I think that is what pushed me forward, combined with the fact that I didn't have many friends at that time because our family had moved to a foreign country and I didn't speak the language. So I had lots of time to develop my drawing skills when I was small. But I wouldn't say I'm an "artist" - rather I'm on the way to it."




mail ALI@ALIISMAIL.COM WWW.ALIISMAIL.COM
image by Ali Ismail




image by André Kutscherauer

## BOGDAN

"When I first realised the immense power of CG! In the CG world, the only limit is the power of computing, because you have no physical limits at all. You can even rewrite the laws of physics and create a completely new world based on totally different rules, other than what we're used to seeing every day. You can create fantastic creatures and landscapes with the power of your imagination, and allow others to share your dreams."

## CESAR ALEJANDRO MONTERO OROZCO

**CG Artist & Freelancer, Digi-Guys**

London, UK & Mexico

"Am I an artist already? I work hard everyday in order to become one. People may tell me I'm an artist, but when I look back in history I realise that there is much to do in order to consider myself worthy of such a title."

## DANA DORIAN

"I became an artist because that was what I was good at, and I enjoy being creative. After I saw Toy Story, I decided to move into animation, and have aspired to make an animated feature ever since."

## DANIEL VIJOI

"I think it came from watching great artists work and the desire to reach a certain level myself in my own artwork. I have loved drawing ever since I was a young kid, and I realised that was what I had to do in my life. But definitely, great artists' works have been the most inspiring elements for me."

## DAVID REVOY

"In my family, my grandfather is a painter (as a hobbyist), and it's almost certain that I inherited as a child a part of his skill. Following that, I can't remember why I started drawing more than other children. Maybe it was simply because my friends liked to read my comics? So, maybe it's an easy answer, but I think my life simply inspired me to become an artist."

## ERIC PROVAN

**3D Modeller, Sony Pictures Imageworks**

LA, USA

"It would be impossible to narrow it down to just one thing. I've enjoyed creating things ever since I was a little twerp. I hadn't thought about pursuing art as a career until just a few years ago. About three months into the computer animation programme at Full Sail, we finally got to play around in Maya, and I instantly knew that this was what I wanted to do for the rest of my life."

## EUGENIO GARCIA

**3D Illustrator & Animator, GrupoW**

Saltillo, México

"The fact of doing something, or doing work, that will be remembered, and because I love to see how the things are built. Everything I imagine I can do in 2D, or draw - it's a fantastic feeling."

## Gustavo Groppo

**General 3D Artist, Mamute Mídia**

São Paulo, Brazil

"For approximately twenty years I have had contact with art. I've always drawn, painted and had interest in other artists' works - mainly artists from past centuries. I have no doubt that CG opened doors to me and was there when I had more inspiration. Perhaps in technical terms, I had to know how to do things that were impossible to me with just a piece of paper or on a canvas."

## Jure Zagoricnik

**Web Developer & 3D Freelancer, Hal Interactive & 3D Grafika,** Kamnik, Slovenia

"It just happened when I started doing 3D."

## Liam Kemp

"It always felt natural for me to work in any area that was creative. Creating imagery was what I grew up doing, so there wasn't any particular artist or incident that sparked off my desire to work in art."

## Mathias Koehler

**Freelance 3D Artist & Industrial Design Student,** Braunschweig, Germany

"When I realised that it is not about being 'artistically gifted'."

## Matt Westrup

"Ray Harryhausen, ILM, fantasy artists such as Patrick Woodroffe, Roger Dean, Tim White - too many to mention!!"

## Michael Seidl

**3D Artist, Modelling & Rendering, www.michaelseidl.com,** Vienna, Austria

"My artistic carrier started 6 years ago. Some friends of mine asked me if I could do an animated logo for their band. I realised that Macromedia Flash soon reached its creative limits, and so I started looking around for tools that could handle my needs. After some research I finally found 3ds Max and installed the trial version. Since then I have been working with 3ds Max and have become more and more inspired by talented artists and the movie industry."

## Neil MacCormack

**Freelance 3D Artist, Bearfootfilms**

Geneva, Switzerland

"I get inspiration from many places; normally 2D artists, films, music, and from the places I go and the people I meet."

## Nicolas Collings

"Cartoon TV shows, movies, video games and comics books."



image by Dana Dorian

## Pedro Mendez

"At the present time, I don't consider myself an artist, I just express and transform my imagination with technology's new tools."

## Pete Sussi

"My dad got me interested in art years ago. Though I suppose Pixar got me interested in character work. Also, from a 2D point of view, I always loved Mort Drucker, the old MAD magazine fellow."

## Peter Sanitra

**3D Artist, ImagesFX,** Prague, Czech Republic

"Mostly when I saw all what could be done in 3D - it's unlimited."

## Petra Stefankova

"I would say I was born for it. I don't know, I've always felt that it's the only thing I ever wanted."

## Rich Diamant

"I can't remember that far back. I've been doing art for as long as I can remember. What inspired me to become an artist in video games was the original Blizzard cinematics for Warcraft 2 and Diablo. I think those were my first big 'wow' moments. I've also always been more into the games than movie side, so seeing those kind of games blew me away."

## Sean Dunderdale

"By chance really, browsing through a university prospectus and was intrigued by the digital animation course."

## Sorin Radu

"A high school friend of mine (nickname 3dVirus on the Theedy forums) was working in 3D and showed me his, and others', works. That made me want to make beautiful things just like them, so just like that I started my own work in 3D."

## Stepan (O)ne Grakov

"I don't know really, but other artists' pieces built my view for sure."



image by Eugenio Garcia

## Sven Rabe

**3D Artist,** Germany

"It started when I was a kid. I just loved cartoon series on television and spent the whole day in front of this box. My mum really hated it. At the age of 15 I decided to create my own comic movie with my "brand new" PC. It took about 2 years to finish working on it nearly every day after school, but in the end it was so much fun to watch - especially seeing other people watching and enjoying it, too. From that point on I knew that I wanted to work in this industry and that this is exactly what I want to do for a living."

## Tiziano Fioriti

**Freelance 3D Artist & Digital Matte Painter**

Italy

"I like to consider myself a creative; the word "artist" is really too important and binding. Besides, what I do is always the most natural

thing to me. Imagination and creativity are in my nature so there hasn't been any formative curriculum in this regard. I started my activity when I was 5 years old when I used to dirty some sheets of paper after picking up a pencil."

## Kevin (Tycane) Beckers

**3D Developer & Designer, INDG,** Amsterdam

"Actually, I kind of accidentally stumbled upon it. I remember the day exactly: I was 16, and was staying at a friend's place. He had a computer (unlike me) and for some reason he had a little program called "Ray Dream" installed on it. I started it up, and from the first click I was hooked. Before that time I'd never heard of CG. So, it's not really something that inspired me. To me, it's more like an addiction. I love the fact that I can make anything I want with little time and effort. (What would, for example, my Honda Civic look like if I put some serious sideskirts under it? Well, let's make it and see!)"

## Vojislav Milanovic

**General 3D Artist, Animated Biomedical Productions,** Sydney, Australia

"Nothing really. I think it was always within. One day my hand just started drawing, and the next I was up to my head in projects!"

## Zdenek Urbánek

**Student,** Liberec City, Czech Republic

"I have always liked drawing and creating things, and CG has been it - I can create everything that I imagine. When I was very young I liked LEGO, and then I played games like Tycoon or other similar creative games. But it was not creative enough, and so now I do CG. I think I was born with a need to create things."

## Next Issue:

Join us next month when we will ask artists the question:

## How do you take time out from the world of CG/Art?

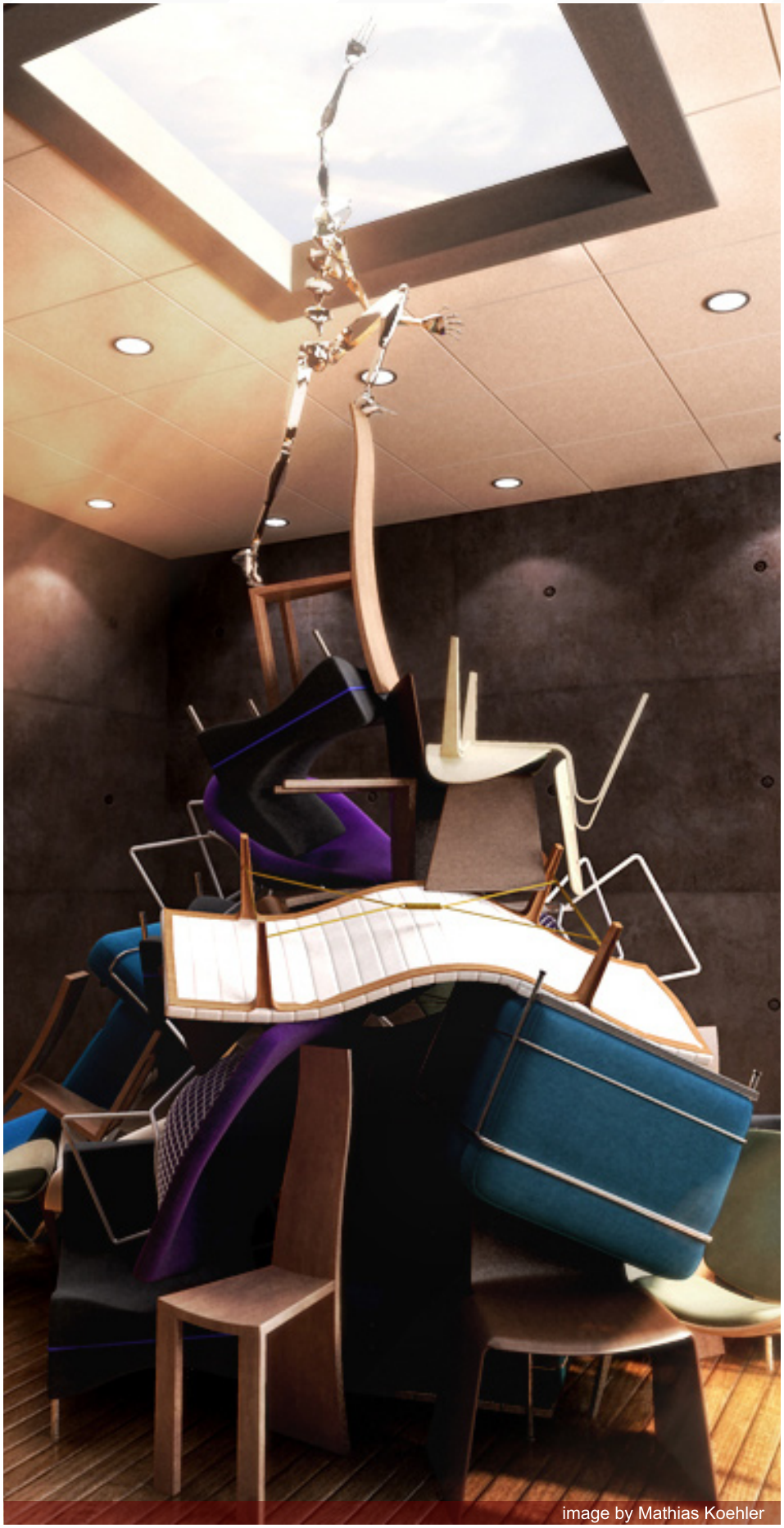


image by Mathias Koehler

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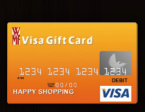
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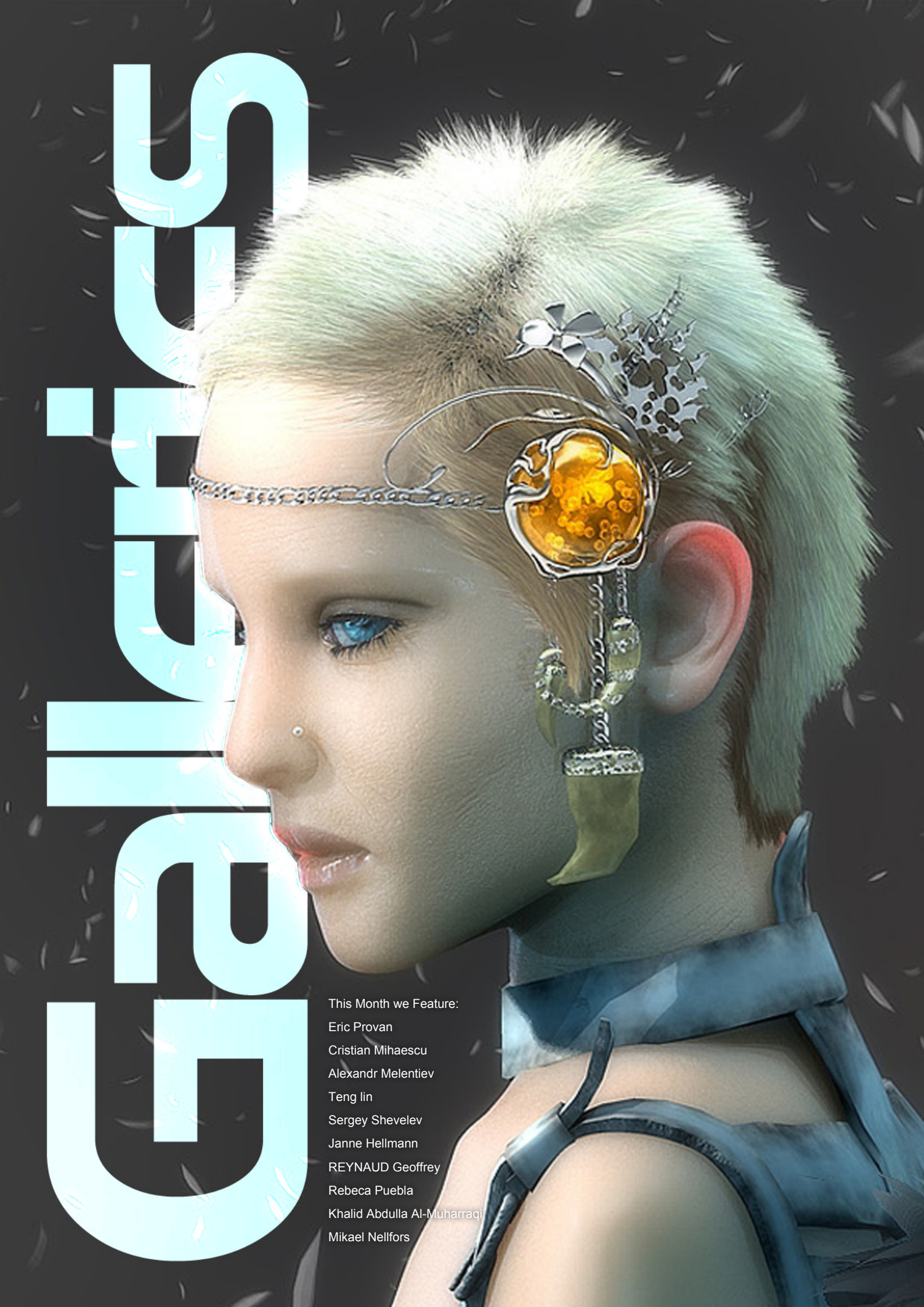
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# gallery



This Month we Feature:

Eric Provan

Cristian Mihaescu

Alexandr Melentiev

Teng lin

Sergey Shevelev

Janne Hellmann

REYNAUD Geoffrey

Rebeca Puebla

Khalid Abdulla Al-Muharraqi

Mikael Nellfors

# WATCH-VISUALIZATION

Janne Hellmann
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# Stop the turntable

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## Yo Ho

Eric Provan

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## Runaway

Alexandr Melentiev

alex-design2003@mail.ru



## GEP

Sergey Shevelev

www.serg.deviantart.com/gallery : serge_shevelev@mail.ru

You can follow a making of for this image in a future issue of 3DCreative

## NIGHT OF THE CAT

Cristian Mihaescu : cristian.mihaescu@gmail.com

You can follow a making of for this image in this months magazine!





# Dark Phoenix

Rebeca Puebla
rebecapuebla@hotmail.com



## PARISIAN COFFEE IN THE 1900S

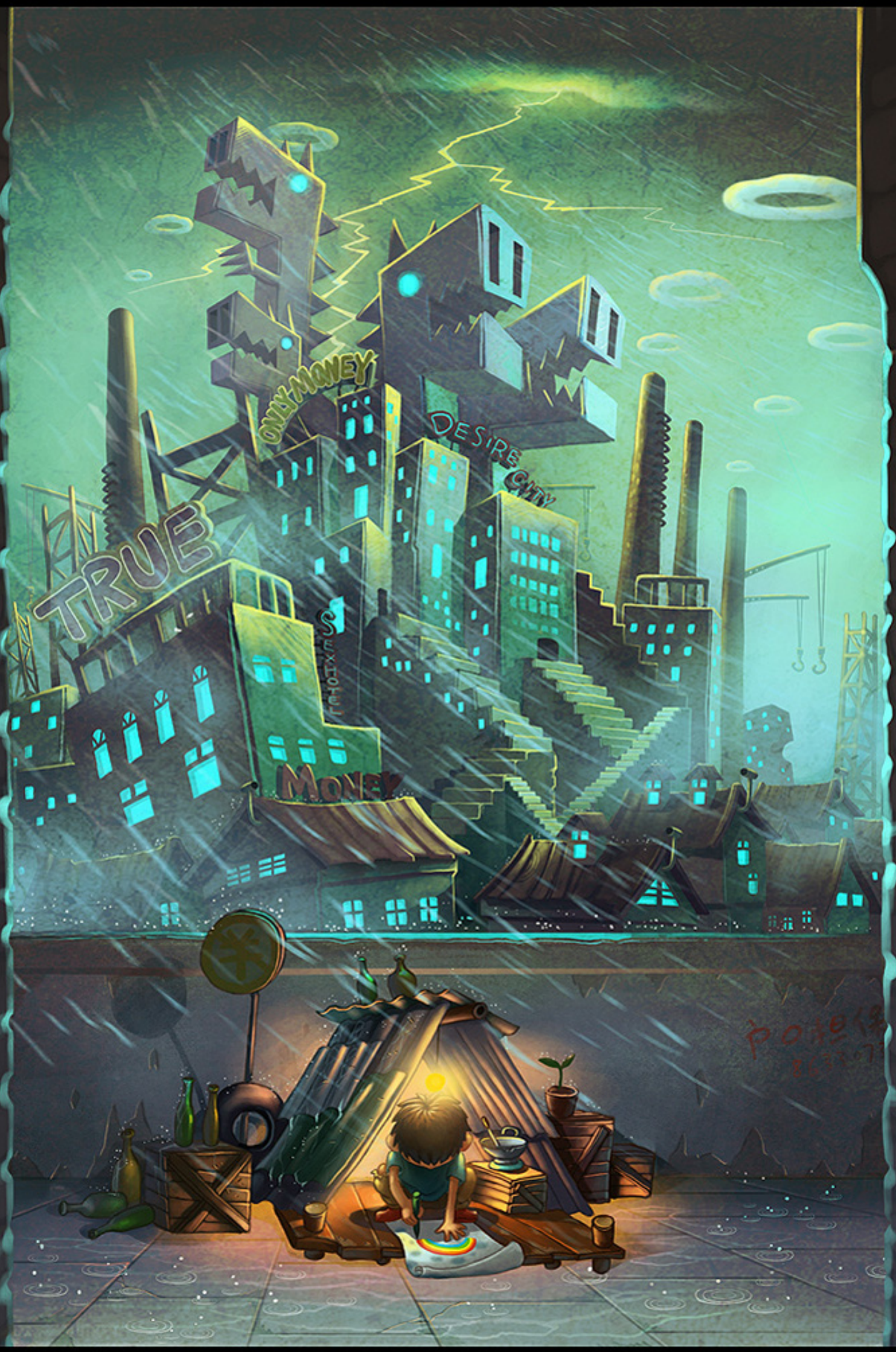
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# Freedom

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# Rainbow in my Heart

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# SynthEyes 2007 ½

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# the 3DC challenge

3DCreative Magazine introduces the 'Challenge' section of the mag. Every month we will run the challenges, available for anyone to enter, for prizes and goodies from the www.3dtotal.com shop, and to also get featured in this very magazine! The 2D Challenge runs in the ConceptArt.org forums, and the 3D Challenge runs in the Threedy.com forums. Here we will display the winners from the previous month's challenges, and the Making Of's from the month before that...



# Crocodile

## Stylised Animal challenge

In Association with CONCEPTART.ORG THREEDY FORUMS

# Stylised Animal Challenge

## Crocodile

## The Challenge

Welcome to the Stylised Animal Monthly Challenge. Each month we will select an animal and post some images in the forum thread as reference. All you have to do is to create a 2D image of this creature in a stylised/abstract/cartoon style, whilst keeping your creature instantly recognisable. We wanted to publish some content in 3DCreative Magazine on how to create stylised animals, such as you see in the many feature films and cartoon galleries. We thought this regular competition might bring in just the images/Making Of's that we need, whilst giving away great prizes and exposure. If it continues to be a success we will try to boost the prizes up as much as possible! This month's animal was the Crocodile. Here you can see the top nine entries, as voted for by the public.

## What are we looking for?

Funny and humorous entries which break the animal down to its most recognisable components; emphasize these in whichever ways you think best, and render your stylised/abstract/cartoon masterpiece. The rules are pretty laid back: please submit 1 x 3D render (minor post work is OK); it's up to you if you want to have a background or wish to include some graphical elements or text on your image. Renders of the 800 pixel dimension sound about right, but the winners will be featured in 3DCreative Magazine so if you can create some higher resolution images too, all the better! There will be one competition per month, with the deadline being the end of the month (GMT). For a valid entry, just make sure your final image is posted in the main competition thread before the deadline. We require the top 3 winners to submit Making Of overview articles that will be shown on either 3DTotal.com or in 3DCreative Magazine. These need to show the stages of your creation, different elements, and some brief explanation text of why, and how, you did what you did. We will format this into some nice-looking pages to give you some great exposure, and us some quality content. Each competition will have one main thread which starts with the brief at the top. All entrants should post all WIP's, give feedback, and generally laugh at the crazy ideas that are emerging each month...

## Challenge Thread:

The entire CROCODILE competition can be viewed here.

The current challenge at the voting stage is: HYENA

The current challenge taking place is:
DINOSAUR (HERBIVOR)



9TH ZIVAS




9TH DADDYDOOM



8TH ELPATO




7th IanChaos



6th Husam

5th Nyphe





4TH FIREHAZURD




3RD SHAHIN_FJ

## 2nd HA_Jassar





## 1st Zinkete



2ND CHUCK, MATE



3RD JUAN CARUSO



To join the next challenge, or to view previous and/or current entries, please visit: **www.threedy.com.**

Or for the 2D Challenge, please visit: **www.conceptart.org.**
Or contact: ben@zoopublishing.com.

## 2D CHALLENGE

Here are last month's top entries from the 2D Challenge...

1ST DAVENEALE

## Making Of's

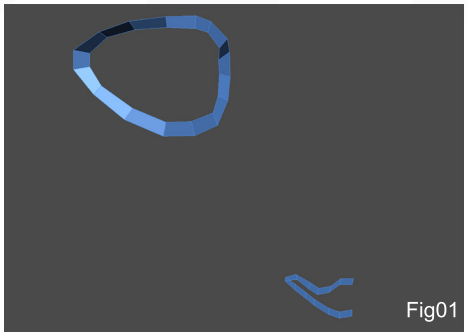
Here are the Making Of's from last month's top three winning entries...

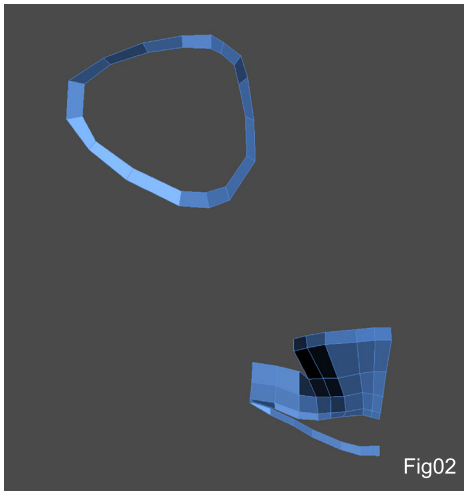
## 3rd - Gekul

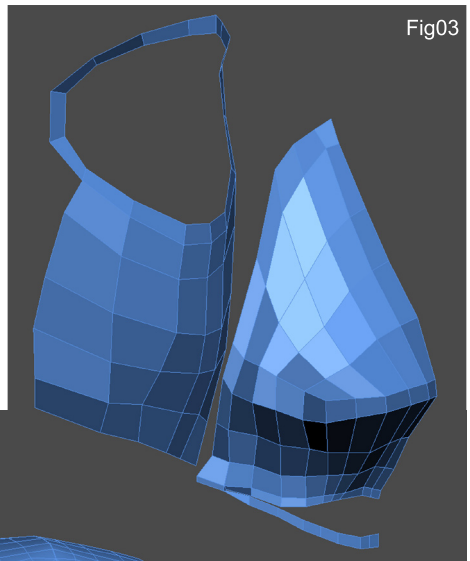
Before starting this challenge a little research was required because the Aye-Aye was a fairly unfamiliar animal to me. Watching videos gave me the impression that they can seem a bit creepy at first, but there is also something endearing about them (or perhaps that's just me). I wanted to try and display these attributes in my entry. My intention on starting this image was to gain some practice with 3D Studio Max, whilst working to a deadline. So it should be noted that the techniques described here may not be the most appropriate. However, this is how I did it...

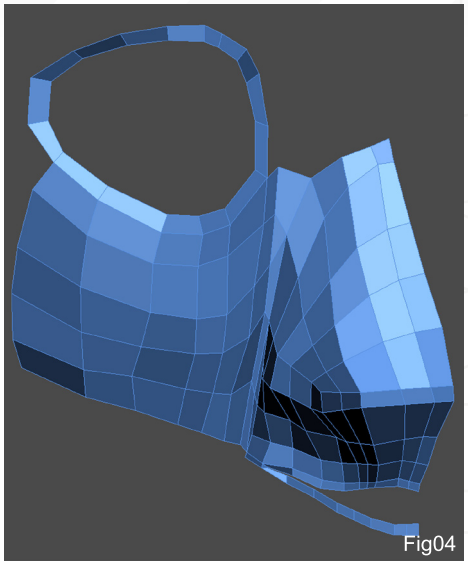
## Modelling

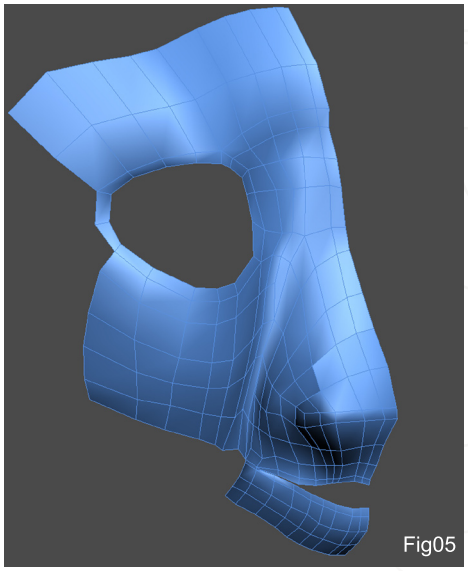
I sketched out some rough reference outlines in Photoshop, with the intention of using them as rough guides and taken into 3D Studio Max 9. The modelling process followed a standard technique; the head started as a couple of rectangles whose edges were extruded to create loops around the eyes and mouth, with further extruding and polygon creation until (half) the head was formed. Further cuts were made as required to add edges that provided detail, and to tweak the appearance. An ear was made in a similar fashion to before, and was added to the head. The model was mirror-instanced and the turbosmooth modifier


Fig01


Fig02


Fig03


Fig04


Fig05

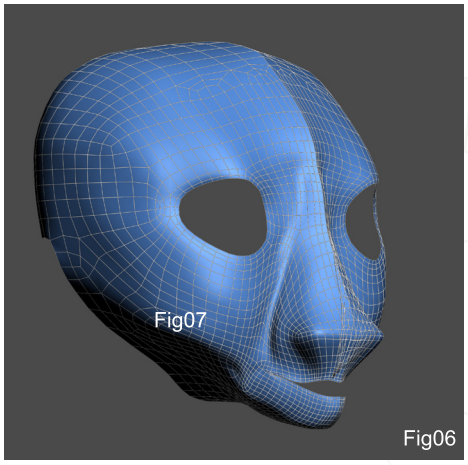
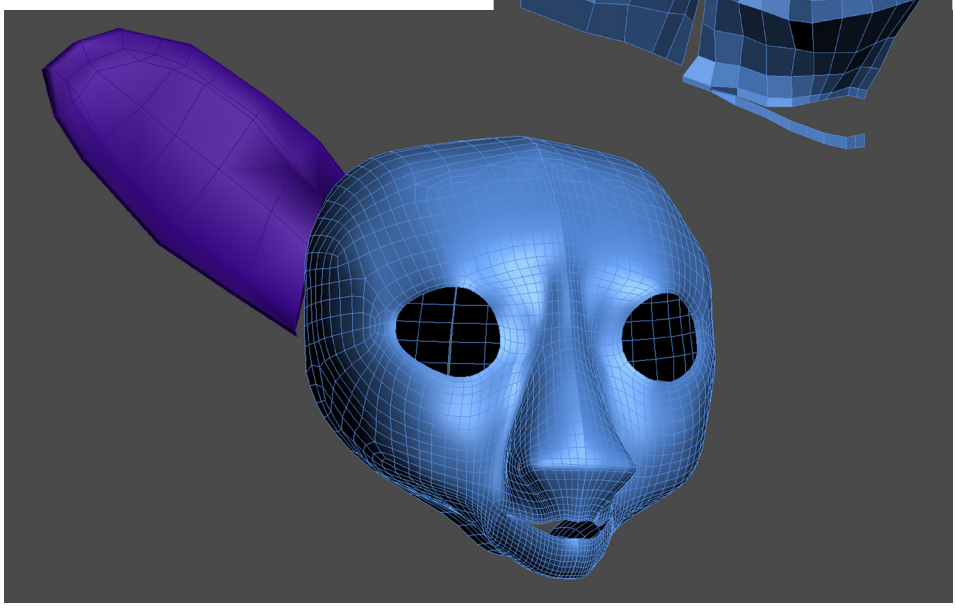
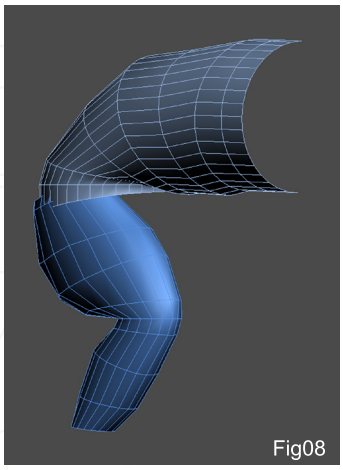
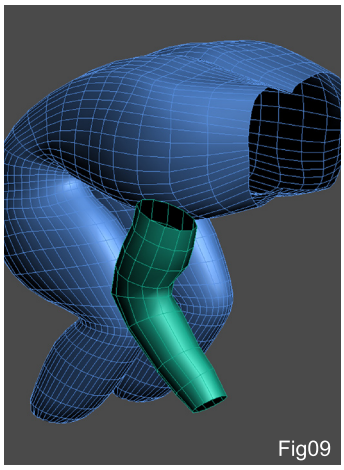


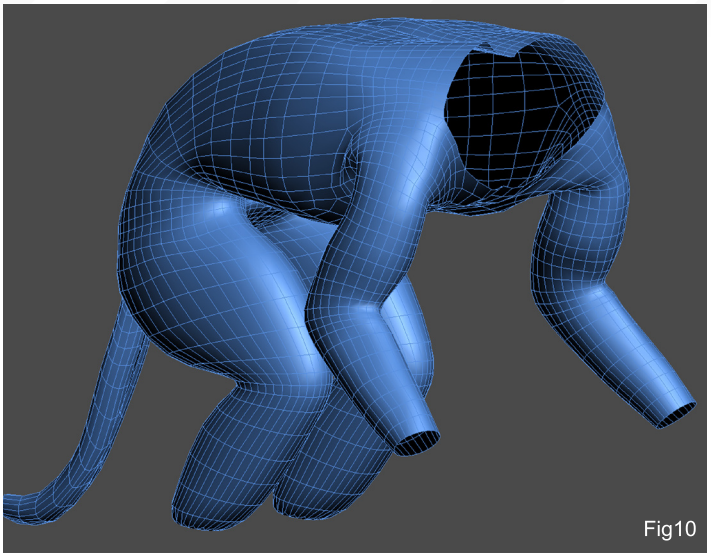
Fig06

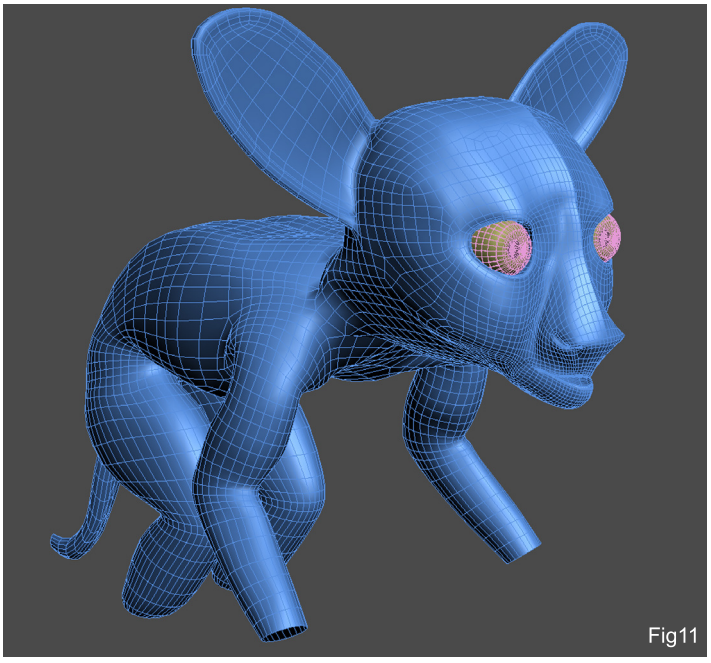


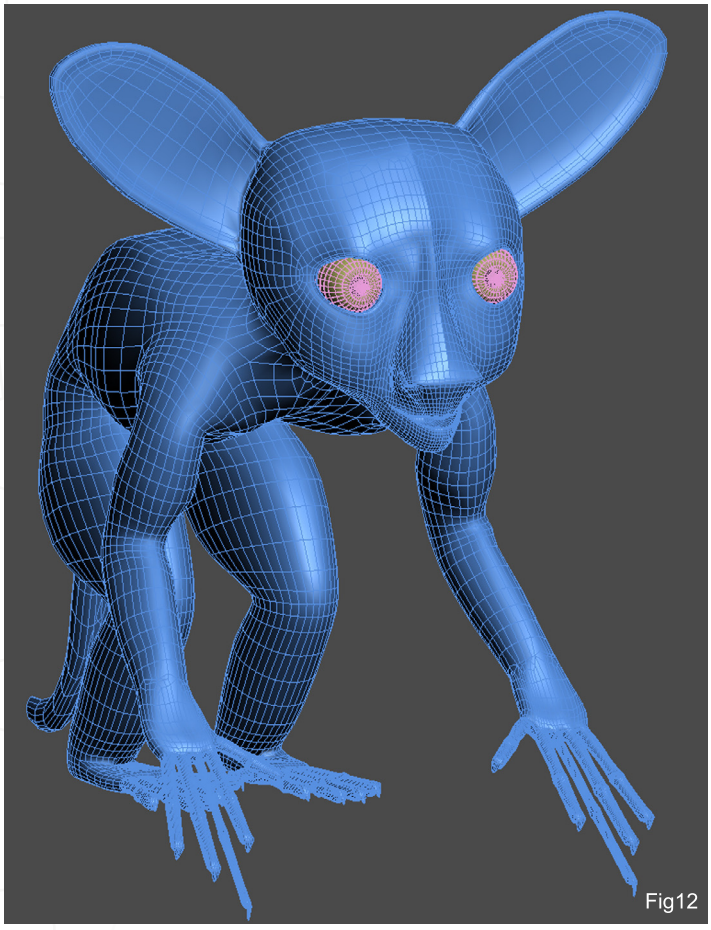
was used (Fig01 - 07). The body was constructed separately from two and a half cylinders (arm, leg and body). Edges were moved and rotated into place, removing or adding any edges where necessary, and then the body was finally attached to the head. The hands and feet were made in a similar way to before, and were welded to the body (Fig08 - 11). The eye consists of two slightly squashed spheres of different sizes, the smaller of which was placed within the other and has a concave front for the pupil (Fig12). The different body parts were assigned separate material ID's (in the polygon sub-object selection), which were used later to help with both the fur and material placement. The model was cloned, mirrored and welded in the middle to form the complete animal (Fig13).

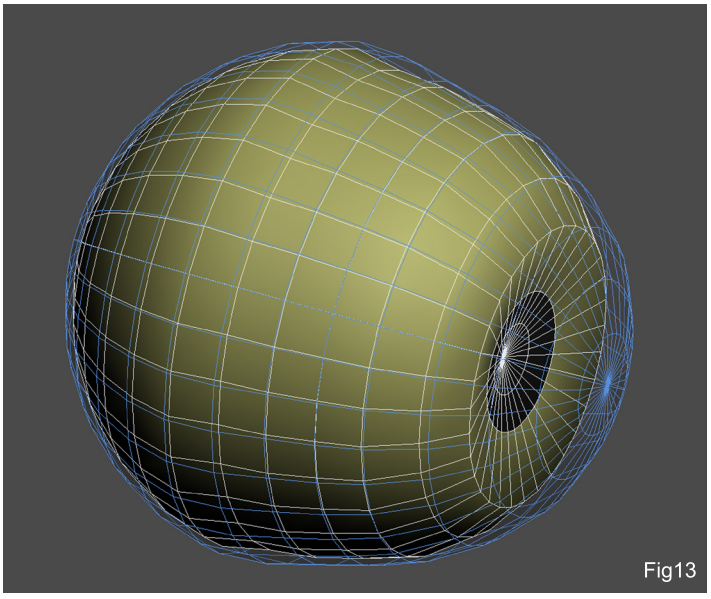

Fig08

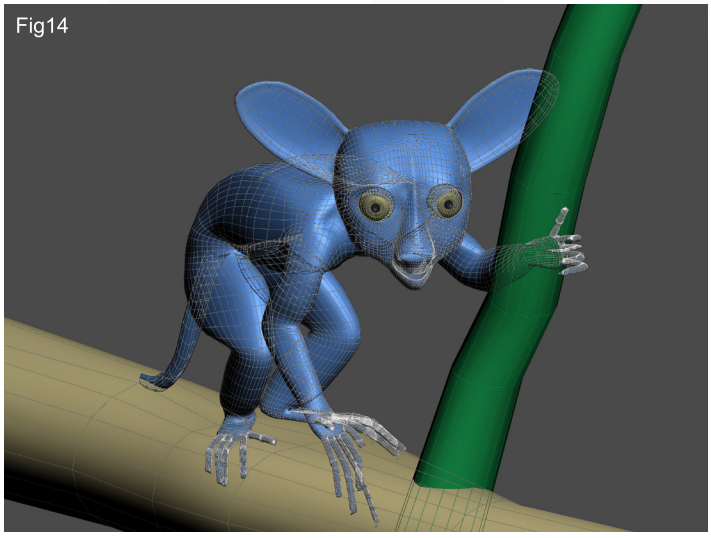

Fig09

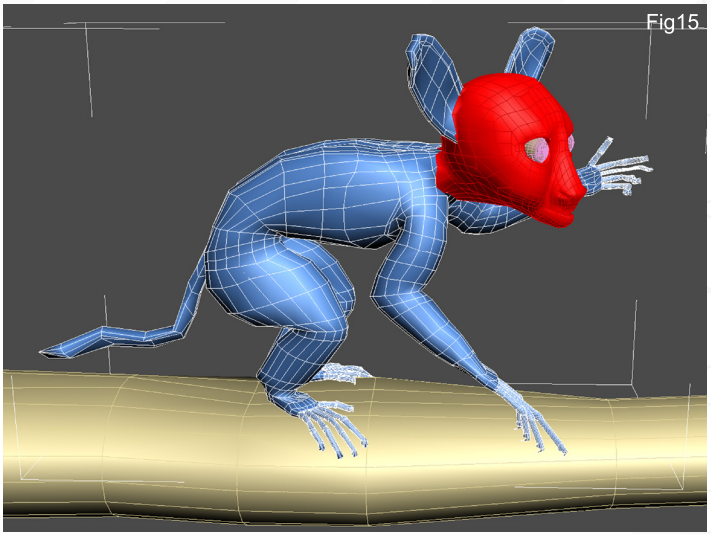

Fig10

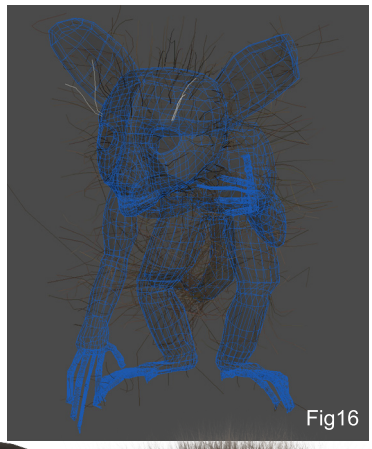

Fig11

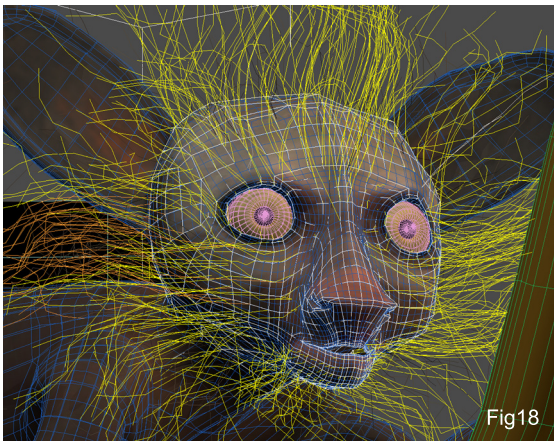

Fig12


Fig13


Fig14


Fig15


Fig16


Fig18

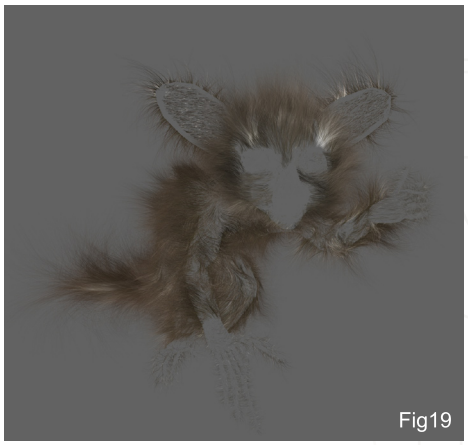

Fig19


Fig17

## Scene and Lighting

The Aye-Aye then needed to be moved into position before texturing and adding fur. It would usually be a good idea to rig the model at this point, but as I was rather pushed for time it was just a case of directly moving the parts into place and tweaking some of the vertices. I also decided to light the scene at this time, as the lighting can significantly alter the appearance of the texture maps and fur. A camera, which was used to capture the final render, was also placed in the setup. The Aye-Aye is a nocturnal animal, so I wanted the scene to be quite dark. Global Illumination was reduced to around 0.6, whilst lighting was provided by three Omni lights, with shadows enabled. One light cast the majority of the shadows, whilst the other less powerful lights served to make the shadows less harsh. These lights given a slightly peachy colour for a warmer image (Fig14).

## Adding the Hair

The hair was added using the Hair And Fur modifier that comes with 3ds Max 9. First of all, I cloned the relevant polygons from each major part of the model to create a separate copy of each body part. The material ID's (assigned earlier) made selecting the appropriate polygons much easier (Fig15). This gave me separate proxy objects to represent the head, ears, body, hands, feet and tail. These slightly lower poly objects were used to grow the hair from (by adding the hair and fur modifier to each). The hair had slightly different properties depending on where it was growing; splitting the model in this way can help quickly display these attributes. The number and density of the hairs could then be quickly assigned according to each body part. This also helped when previewing the styling of the hair, as the particular area being styled could be isolated when rendering, which saved time. Having a large number of visible hairs significantly affected the rendering time, especially on an ancient machine such as mine (Fig16 - 17). I spent quite a bit of time playing around and styling the hair. I used the styling tools within the modifier to brush and scale the hair, and used the selection tools to isolate specific sections of hair where necessary.

Changing the hair guides selection type (e.g. select guide by root) can help when fine tuning the appearance. There are a number of parameters on the various roll-outs of the hair and fur modifier that can change the general appearance of the hair a lot, most of which (such as kink and frizz) are self-explanatory. A little experimentation was needed here; it was a case of trial and error to find a look that was suitable. With higher resolution renders, the hair can look straw-like. The number of hair passes (in the General Parameters roll-out) was increased to compensate for this. The amount of shadow cast by the hairs can be quite high and can make the hair itself quite dark, so this needed to be taken into account, also. Lowering the Self Shadow property (in the Material Parameters roll-out) lessened this effect (Fig18 - 19).

## Materials

Thankfully (at least for me), because the hair covers so much of the body, there was minimal unwrapping required. The face, hands, feet and eyes were unwrapped so that diffuse, bump and specular maps could be added. These maps were made using Photoshop and added to a sub-object material applied to the creature. The outer sphere of the eye uses a ray trace material so that the eyes can reflect some of the surroundings. The scene is very simple, consisting only of some branches for the arboreal Aye-Aye to stand on. The cylinders used for the branches have diffuse and bump maps applied. The background image was created in Photoshop and added as an environment map, just to help set the scene a little.

## The Final Image

The image was then rendered using the scanline renderer within 3ds Max. And that's it! The final image was complete.

## Gekul

For more work by this artist please visit:

contactgekul@hotmail.com

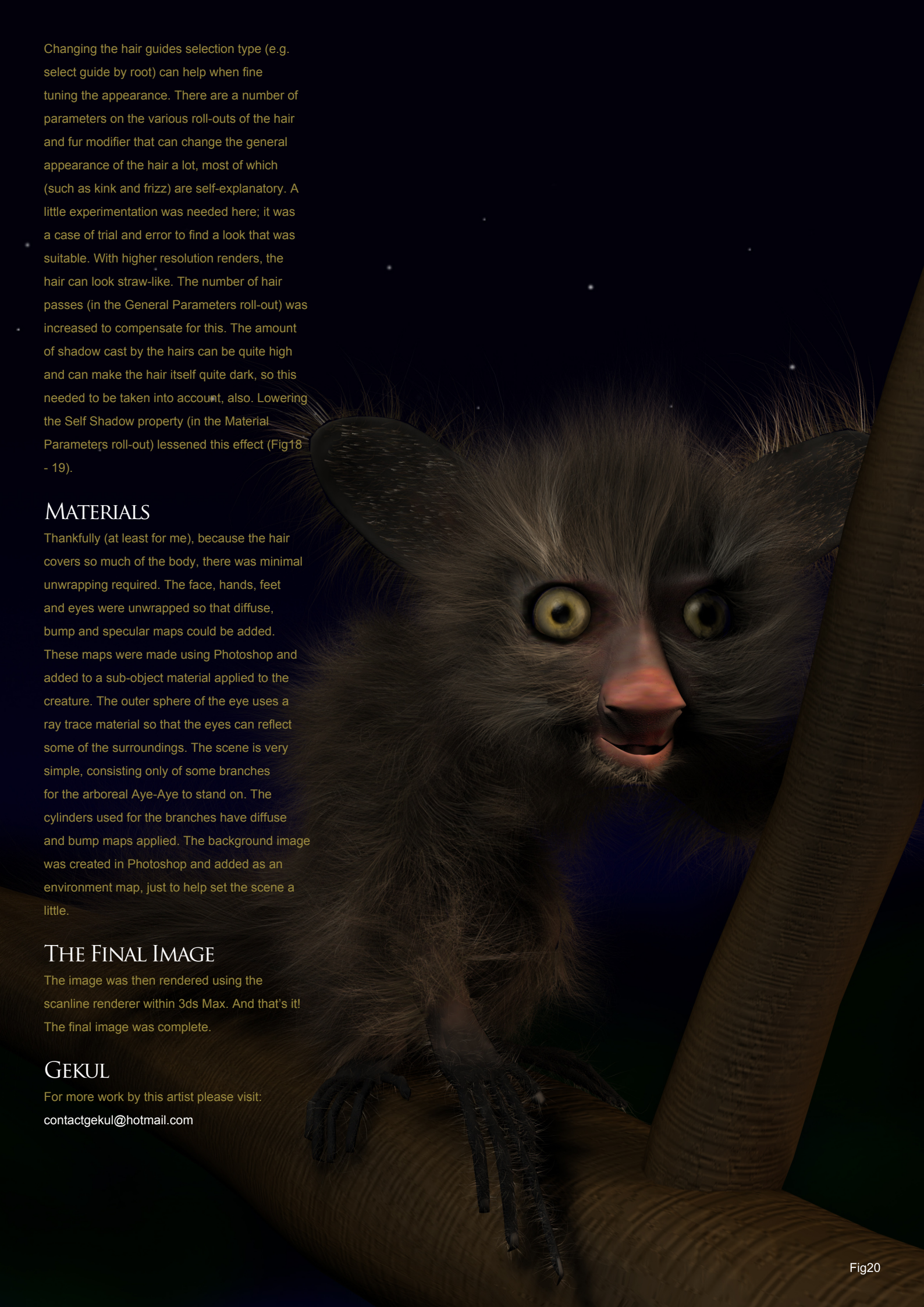
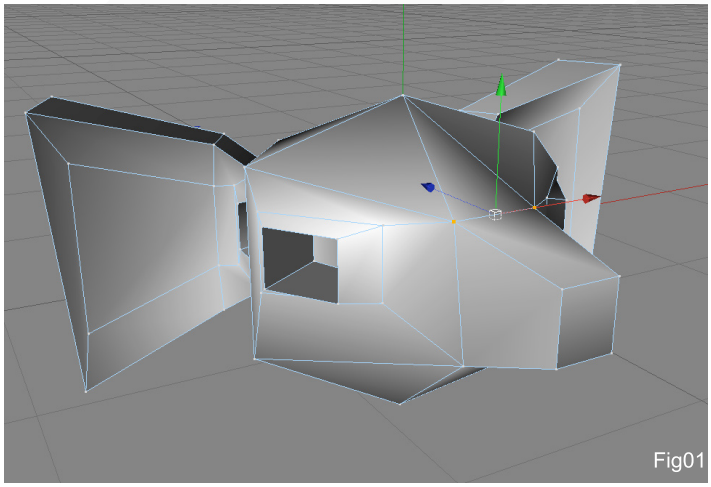
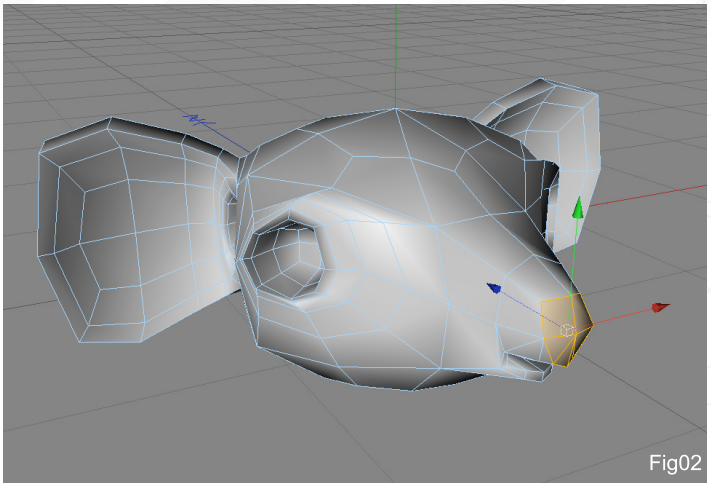
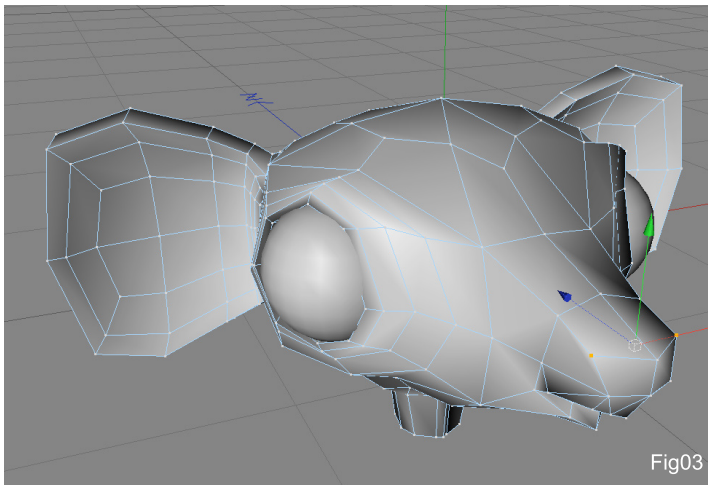
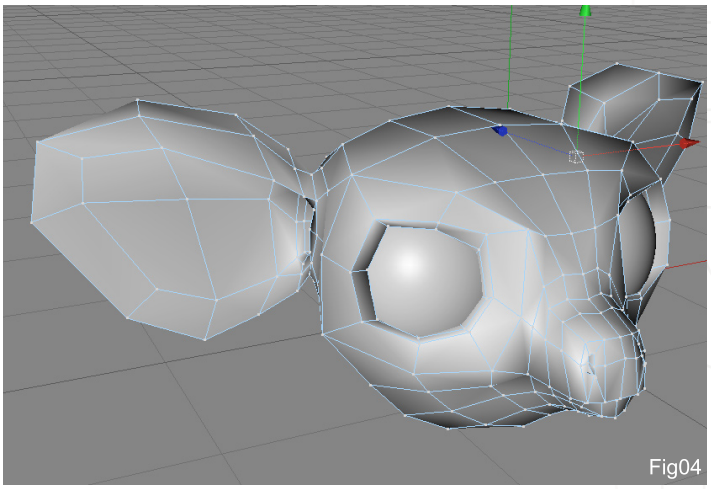


Fig20


Fig01

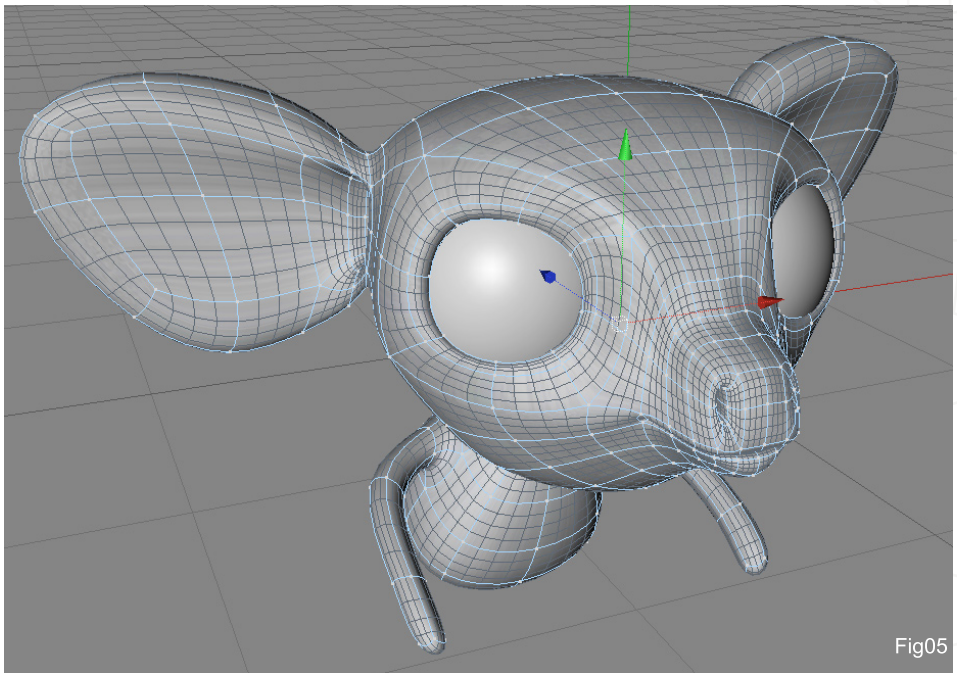

Fig02


Fig03


Fig04

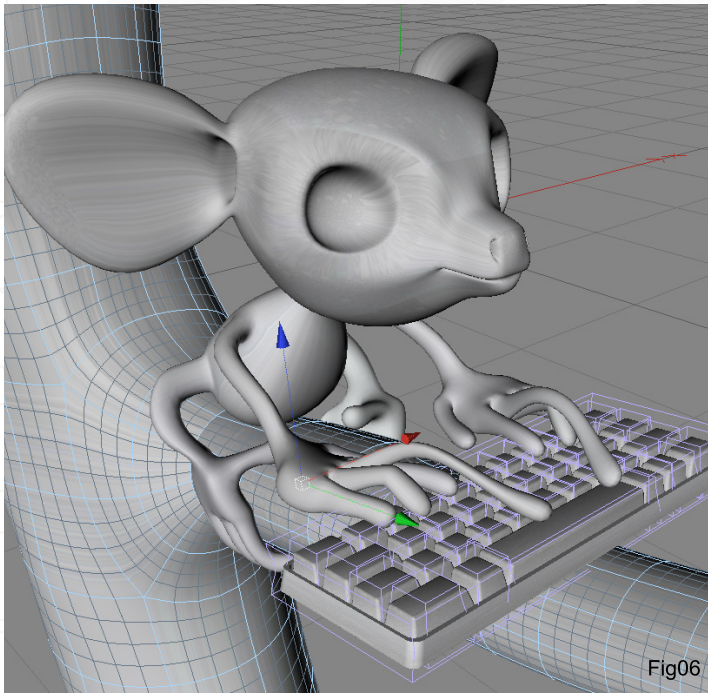
## 2nd - DaddyDoom

Well, this was my first ever competition in the Threedy forum, so it was really cool to get second place! The piece was modelled and rendered using Cinema 4D, and I then added some extra touches using Photoshop. The model was shaped from a primitive cube. I made no previous sketches or concept art, and just started pulling points and extruding faces from the cube until the basic shape of the Aye-Aye's head started to take form (Fig01). Each time I got to a place where the polygons were not enough to go further, I would subdivide it using HyperNurbs and then continue to extrude and pull (Fig02). At this point I added two spheres in the eye sockets to see if the proportions were more or less according to what I had in mind. I also came to the conclusion that the nose was too long, and so made some adjustments on the size. I also added the nostrils and some details on the mouth (Fig03).


Fig05

After the head was close to complete I started working on the rest of the body. Since I still have to learn about character rigging, I had to model the Aye-Aye directly in the final pose (Fig04).

The trickiest part of the modelling was the hands. I had never modelled such "detailed" hands (and feet) before, so I was really happy with the result. This was the moment at which


Fig06

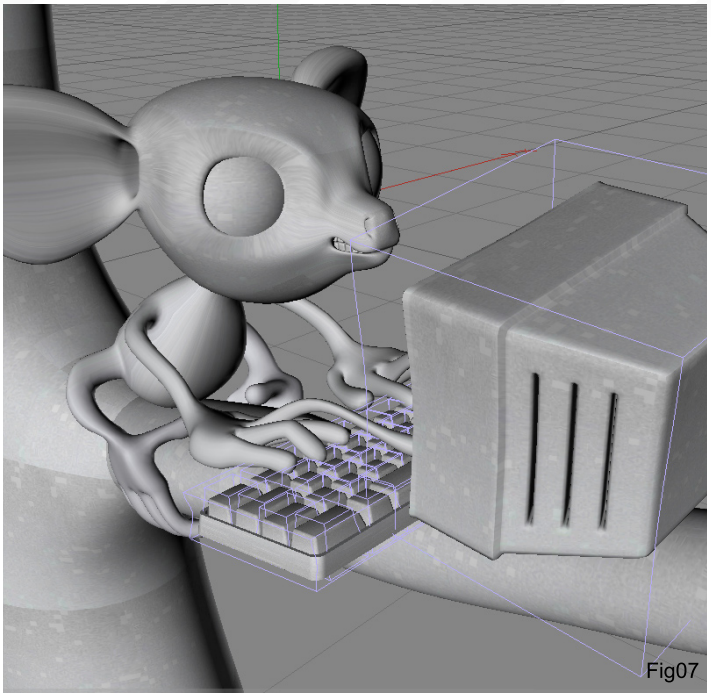

Fig07


Fig08

I decided on the concept of the piece: “Online Scheming Dater Aye-Aye”. After the model itself was nearly complete, I started working on the props for the final scene. The keyboard was modelled using primitive cubes with filleted edges, and I then used taper deformers for each key. The monitor was modelled from a cube. The tree trunk was made from a primitive cylinder by extruding faces until the basic shape was on, and then HyperNurbed to get it smoothed (Fig05 - 06). Since the expression on the Aye-Aye’s face was a bit stiff, I made some changes to the mouth to make him pull that naughty grin of his, and then added the teeth (Fig07). I also added some wires to enrich the PC thing a little, using splines. After the model and major props were finished, I started working on the colours, textures, decorative elements, lights, background, and the overall feel of the scene. Since I wanted to use dark hair on the Aye-Aye, I opted for a pink colour for his skin, with a slight bump map. (I would have done something a bit more elaborate but I still have to learn about UV Painting and BodyPaint3D.) For the eyeballs I used a highly specular material with a bit of reflection, with a simple texture map for the yellow colour and black iris. For the tree bark I went for the Total Textures DVD (Vol. 10) and got myself a nice bark map. For the monitor and keyboard I worked from a photo of a scratched plastic surface, and after some adjustments I’d set up the texture with bump and displacement for a more impressive result. The tree canopy was made using a cool tree model from Cinema 4D’s built-in library. I cloned and placed several copies of it until I was happy with the balance. For the background, I Google-searched the word “Madagascar”, and some cool landscapes from the island came up. I chose the best that fit the scene and used it as a background object. The lighting setup was quite simple; since I was using Stochastic GI most of the lighting problems were solved. So I simply used a light plane on the computer screen to emit some light from it, and placed an extra light


Fig09

source above the Aye-Aye to get more strength on the shadows (Fig08). It was then time for some hairdressing... I used the awesome Hair plug-in from Cinema 4D, which is really easy to use. The Aye-Aye was subject to three different hair layers: the first being a long and thin hair layer with a light colour, the second a slightly thicker layer of mid-length hair, and the third a much thicker and shorter layer to add some opacity to the overall coat. I brushed and curled each layer to get a more natural and wavy look (Fig09). After rendering, the image went through some post-production adjustments in Photoshop: some dirt was added on the computer and keyboard texture; areas of the Aye-Aye's body were darkened; Lemur pictures were added to the side wall of the monitor (a scheming dater must have a wall of fame for his trophies); and finally, some text was added (Fig10). Voila! I hope you like my Aye-Aye and that this Making Of has been somehow useful for you. This was my first Making Of, so please excuse me if anything is not clear or detailed enough, especially because this was made in between the huge pile of "serious" work that I have to do. Anyway, it was FUN! See ya next time!

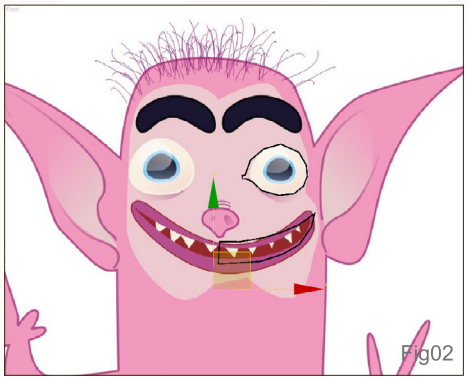
## DaddyDoom

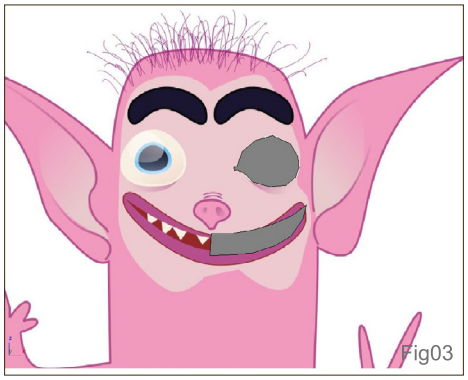
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Fig10


Fig01


Fig02


Fig03

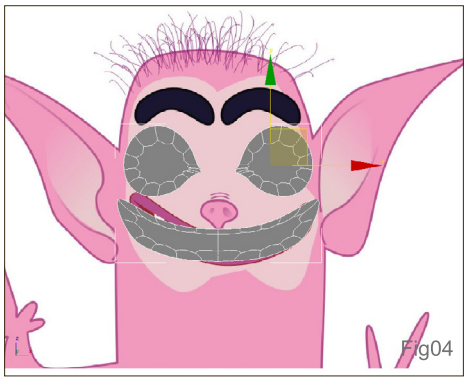
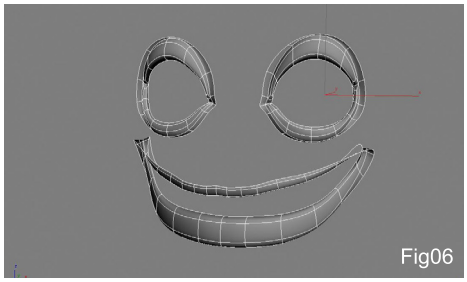
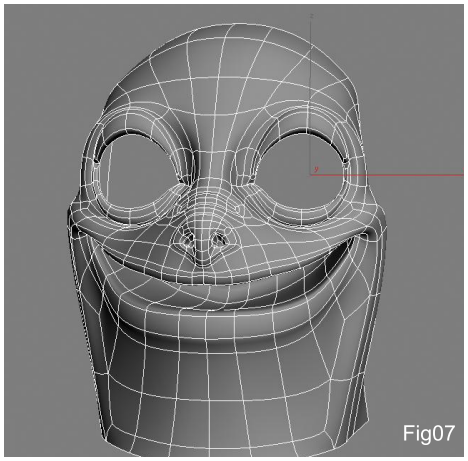

Fig04


Fig05


Fig06

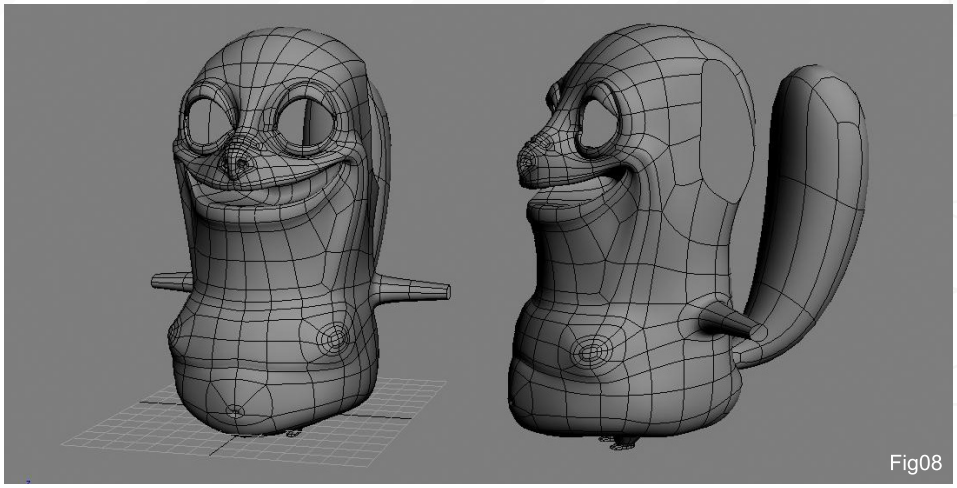

Fig07

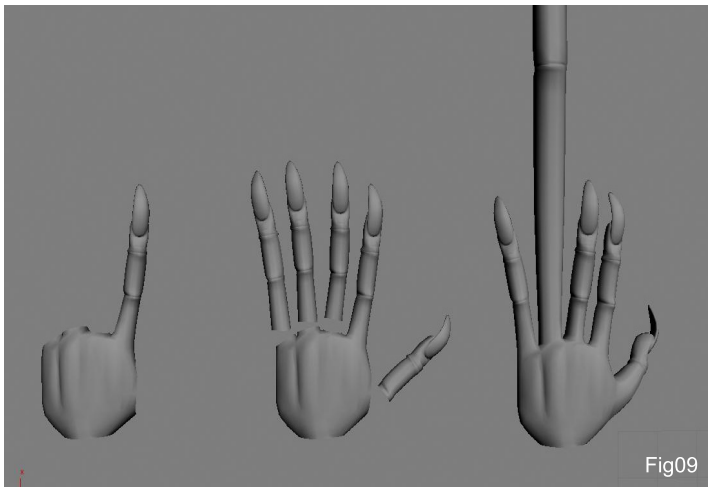
## 1ST - ZINKETE

First of all I started with a quick sketch in CorelDraw, even though I usually start on paper. I had a basic idea in mind; I wanted to make an ugly animal, just like the Aye-Aye itself, which seems to laugh at everything and has fear of nothing (Fig01). Once I had the concept down, I applied some colour in CorelDraw.

I started modelling over the sketch and continued modelling by using my reference images as guidance. The first things I modelled were the mouth and the eyes, by making loops - polygon by polygon. To do that, I started by making a spline, tracing the outline of the eyes and the mouth, and then cloning the edges and giving them volume until I achieved a good starting point. The result of this was that, right from the beginning, you could see the final expression that I was aiming to achieve (Fig02 - 05). Once I had the main outline of the face, I gave the details their volumes (Fig06). I was then able to continue by extending up to the

nose until I had created the whole face (Fig07). The next step was to make the body and the arms (I left a hole in the head where I wanted to insert the ears and left another hole for the hands, which were made separately) (Fig08). To make the hands I started by making the palm and one finger only. That one finger was then cloned and pasted to create the other ones. Finally, I scaled up one of the fingers that the Aye-Aye uses to balance itself (Fig09). To finish the model I made the ears, eyes and sharp teeth (Fig10). I imported the model into ZBrush to add some detail, and then applied those details as a normal map in 3D Studio Max. In Fig11 - 12 you can see a comparison between one model without normal bump, and the other with normal bump. When I finished the modelling stages I started with the texturing. The first thing to do was to apply a vertex colour to texture the model using plain colours. By means of rendering to texture, I got the diffuse colour into a bitmap (the one I used to start texturing) (Fig13). In Photoshop, with the help of the sample


Fig08


Fig09

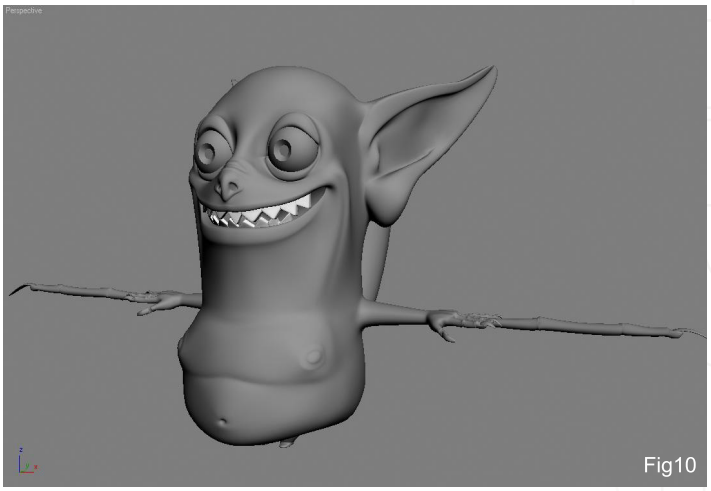

Fig10


Fig11


Fig12

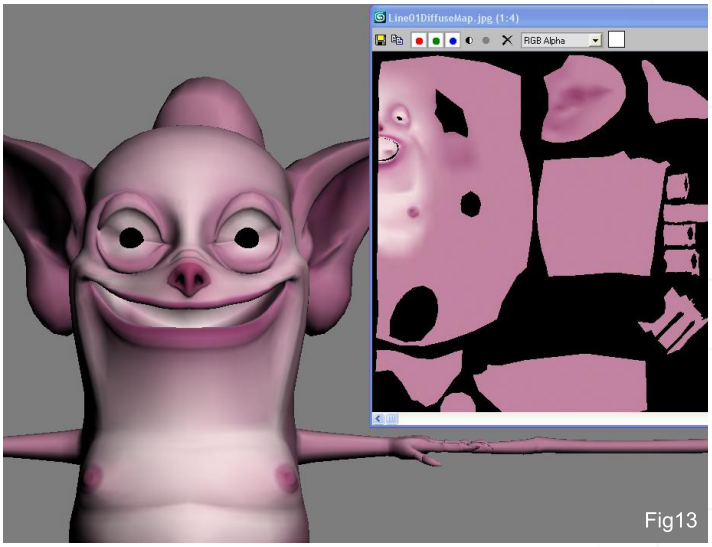
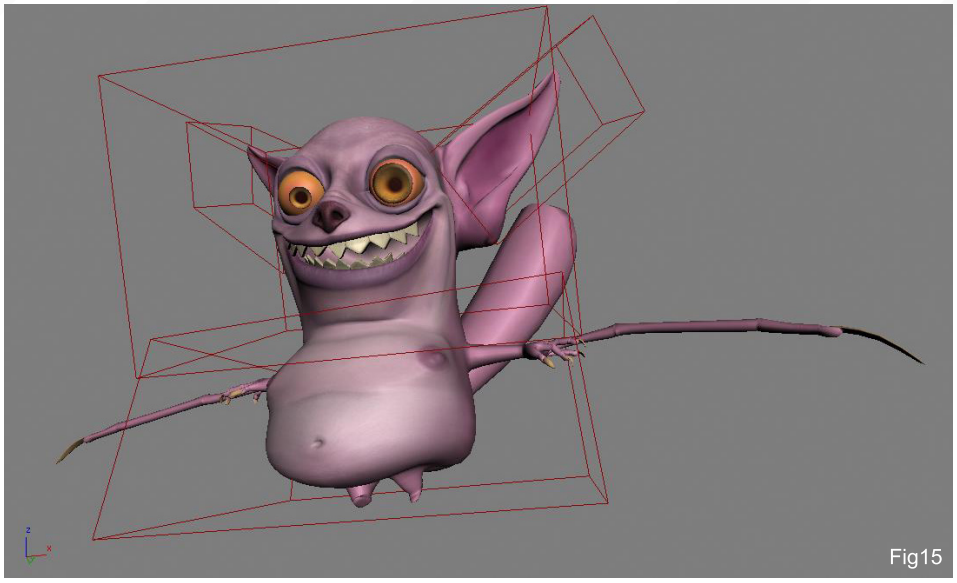


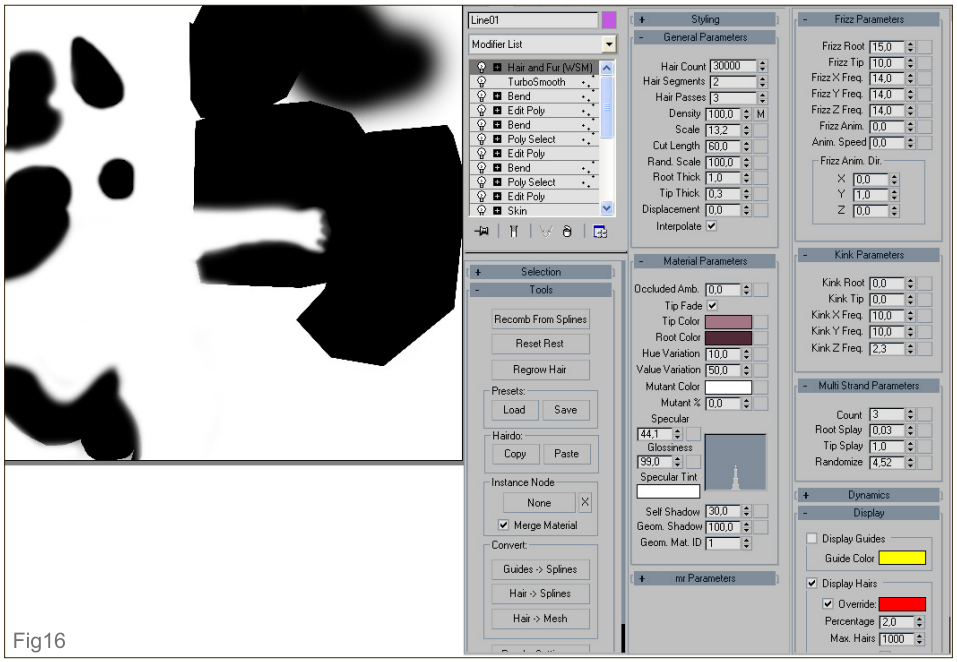
Fig13


Fig14


Fig15

images, I made the map of the body, leaving the map I had before as a base. Finally, I textured the eyes and the teeth (Fig14). The next step was creating its pose. To do that I used a basic setup made of boxes and modifiers, like FFD's and bends, that helped to create the definitive pose (Fig15).

I then modelled the scene, which I gave a false perspective in order to achieve the feeling of greater depth. For the lighting I used V-Ray as the render engine. The lighting setup was not too complicated: one V-Ray light opposite the animal, an Omni light to fill in from behind (so I could highlight the outline), and an HDRI map in the environment (which provides global lighting to the scene). With the lighting setup defined, I created the fur using Hair and Fur from 3D Studio Max 9. To achieve different densities of fur, I used a black and white map (the map I used, and the hair and fur parameters, can be seen in Fig16). With the fur complete, the last stage was the post-production render. I made a render in V-Ray, as I mentioned before, plus two channels of Occlusion: one with fur and the other without.


Fig16

For the main render I tweaked the parameters in Photoshop, such as Colour Balance, Brightness/ Contrast, Hue/Saturation, and so on, to achieve a better finish. I placed both Occlusion layers over the main render; the one with fur at 20% opacity, and the one without fur at 60% opacity.

The reason why I made two Occlusion passes was that, if I used just the Occlusion pass with the fur, the render would be darkened too greatly; if I just used the one without fur, the fur seemed to cast slight shadows. To finish up the details I used the Blur tool to blur the foreground


Fig17


Fig18

and background to achieve a better feeling of depth (Fig17 - 18).

To cap it all off, I put the final render into a template which I had made previously with my signature and logo (Fig19).

## Zinkete

For more work by this artist contact them:
zinkete@gmail.com or visit
zinkdesign.blogspot.com



Fig19



BOXX



Image courtesy of Olivier Derouetteau, http://olive2d.free.fr

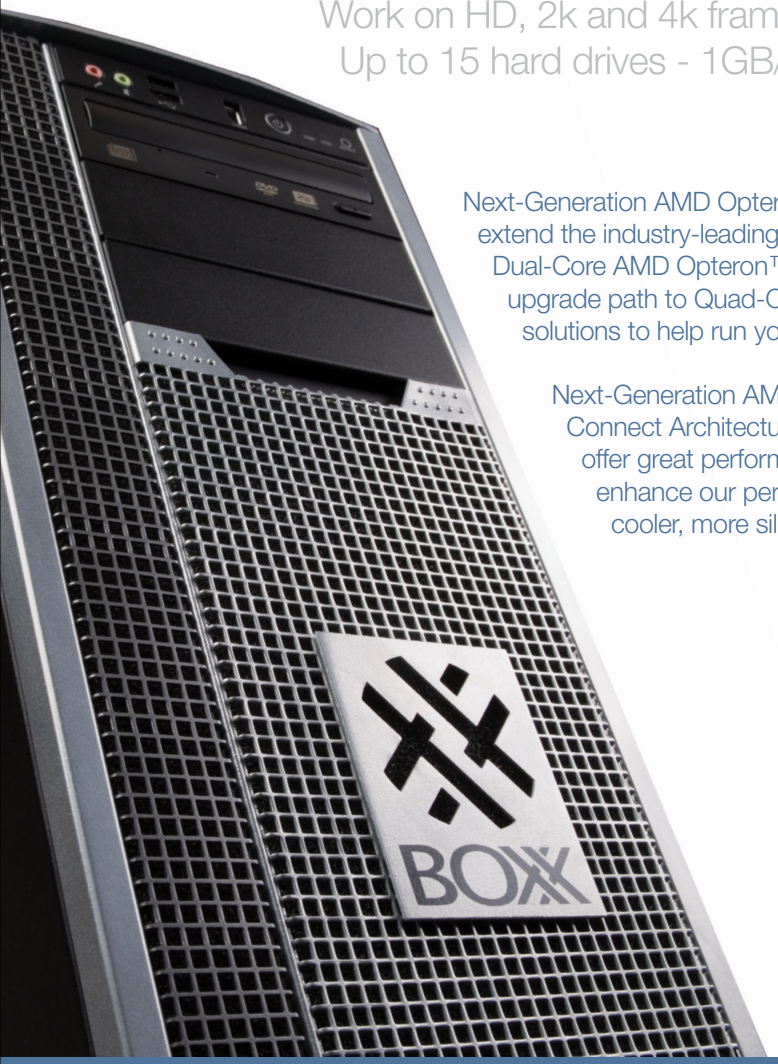
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Model by: Phillip Obretenov



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3DSMax Version
Page 137

Cinema4D Version
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Lightwave Version
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This Month :

## Environmental Lighting Part 4 - Electrical

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"...Time to start giving shape to the head and the torso. At this point it should start to be obvious that the model is a girl, not a guy..."

# Candy Girl

## Character Creation in ZBrush

Alex Huguet takes us through the processes and techniques that he used when creating his "Candy Girl" image. He starts off by explaining how he made the basic shape, using ZSpheres...

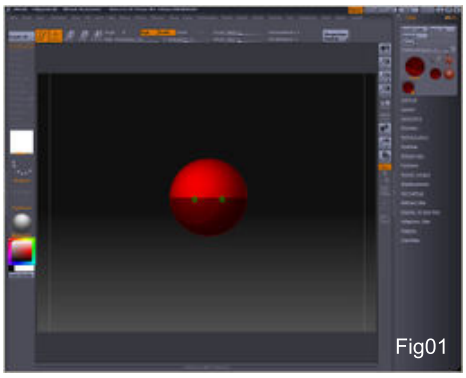
# Candy Girl
## Character Creation in ZBrush

## Created In:

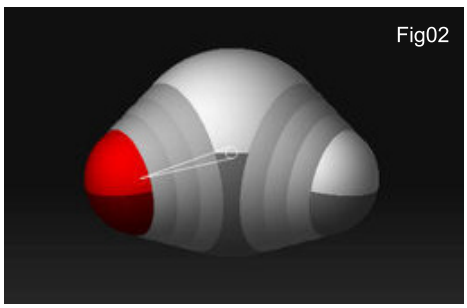
ZBrush and 3ds Max

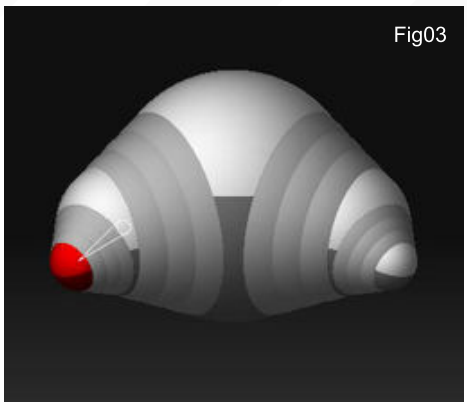
## Basic Shape with ZSpheres

In this first section we are going to use ZSpheres to create a basic shape for our character. Go to Tool > ZSphere and drag a sphere onto the canvas. Then press T on the keyboard to go into Edit mode, and then press X to activate the symmetry on the X axis (Fig01).

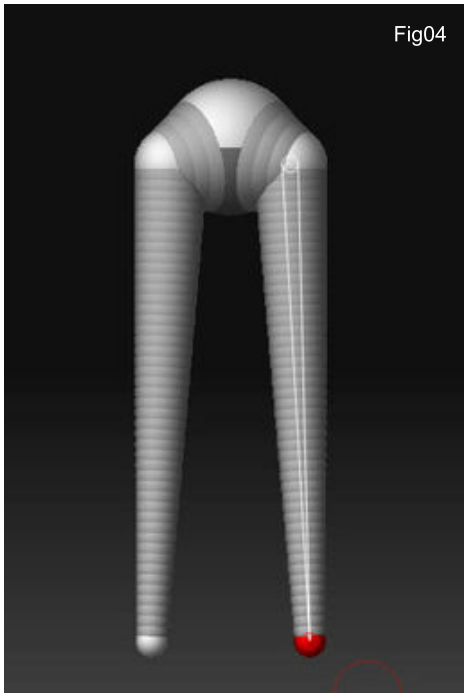

Fig01

Click and draw on one side of the ZSphere, whilst in draw mode, to add new spheres to it. The first sphere that we created will be the central part of the body (the hips). From this new sphere that we just created, we will extrude the legs. Click and drag again to create another


Fig02

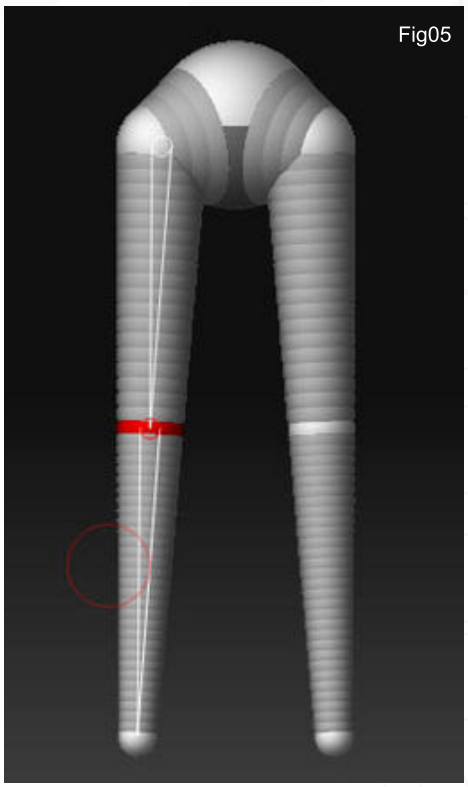

Fig03

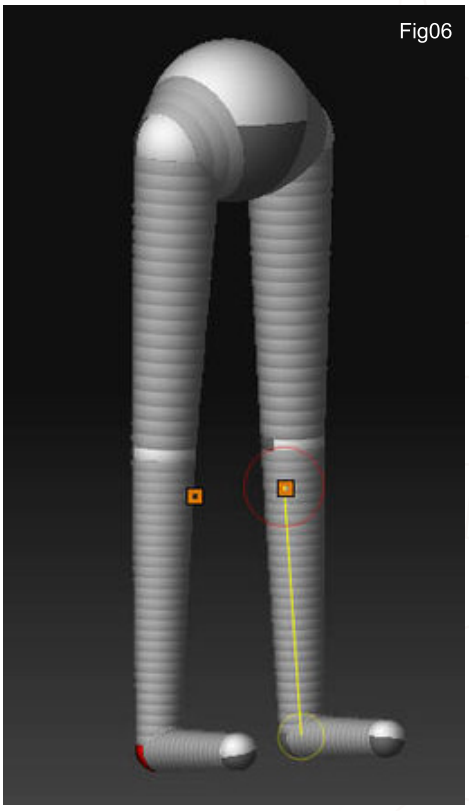
sphere on top of the two last spheres (Fig02 - 03). Now press W to go into Move mode, and move the last spheres downwards. We have


Fig04

now created the legs (Fig04). We press Q now to go back to 3D Edit mode, where we can now click on the middle of the legs to add a new ZSphere, which is going to be the knee (Fig05). Now add another ZSphere at the end of the leg and move it (as can be seen in Fig06) to create the foot.

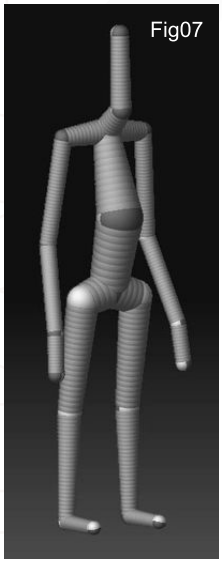
Using the same procedure we will now create the spine and the arms of the model, as well as the head, as can be seen in Fig07. We can now press the A key to see how our mesh is going to look (Fig08). We press A again to go back to the ZSpheres view, where we will add more ZSpheres to the top and bottom of the knees,

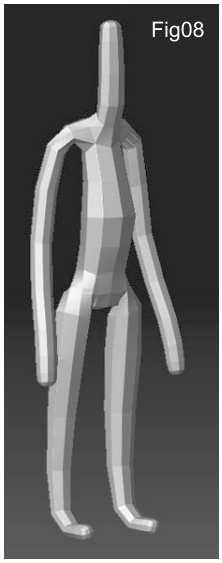

Fig05

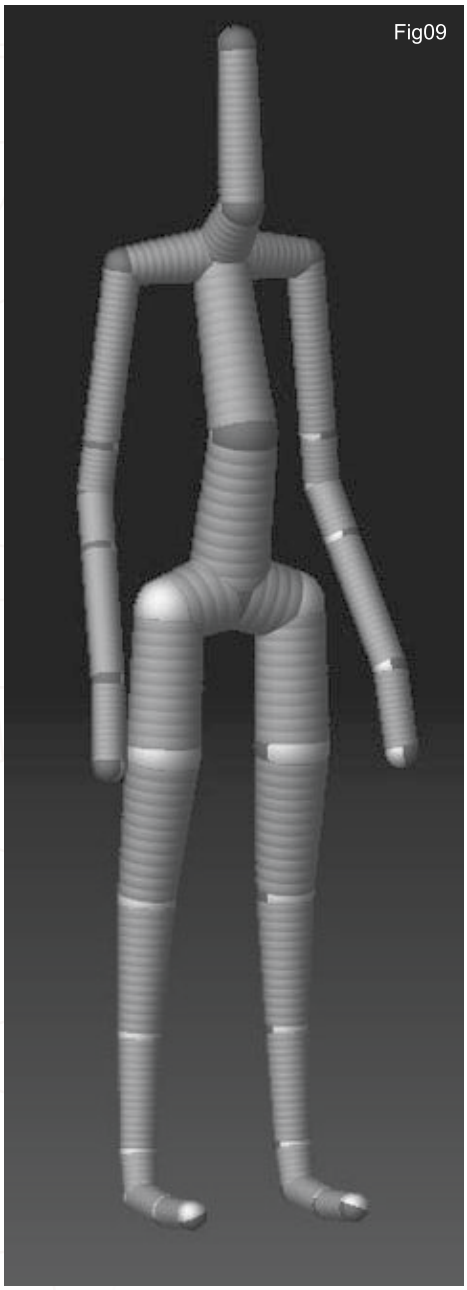

Fig06

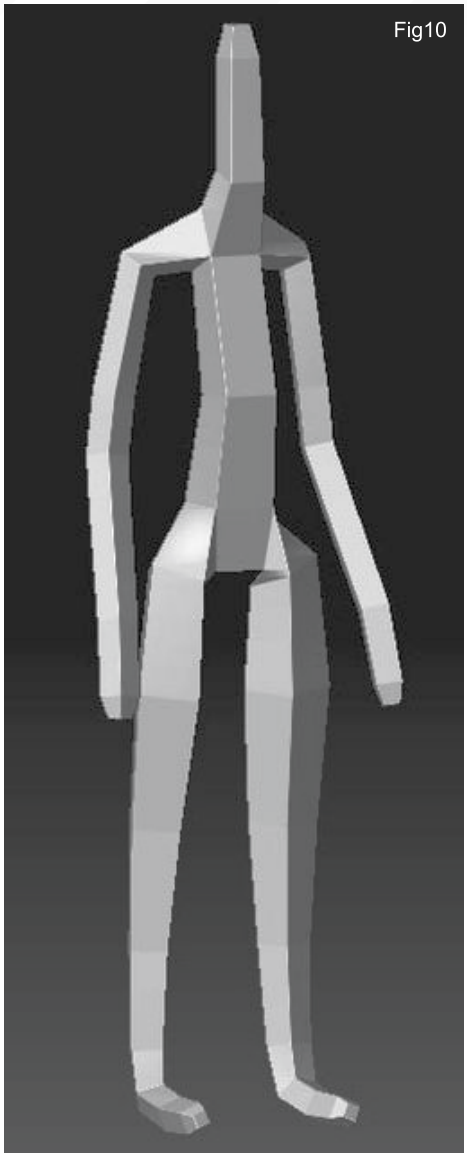
and also on the top and bottom of the elbows (Fig09 - 10).

Finally, go to Tool > Adaptive > Make Adaptive Skin, to create a new mesh based on the ZSphere model.


Fig07

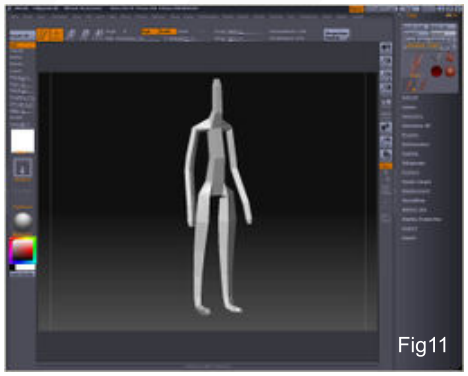

Fig08


Fig09

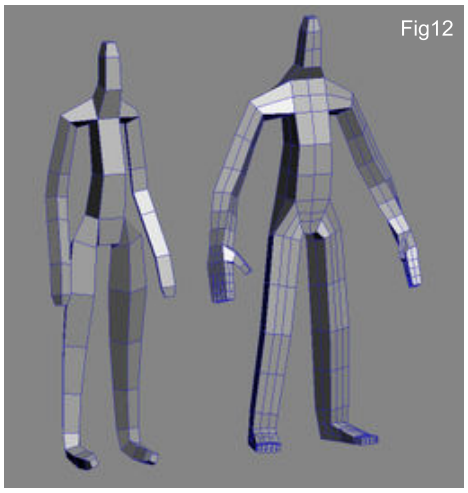

Fig10

## Adjust Topology in 3D Studio Max

Next we go to the tool palette where we will find our new model created from ZSpheres. Let's click on it and replace the ZSpheres model with the new one. By default, this new model has two levels of division, so we will press Shift + D to go to the lowest level. We are now ready to export our low resolution cage into 3D Studio Max® to refine it. To do so, we can just click on Tool > Export and choose where we want to save the .obj file (Fig11). Import the .obj mesh into 3ds Max; with its polygon tools we can edit the shape, add some loops and create the proper fingers and toes, as can be seen in Fig12. Take your time doing this and carefully place loops where you think you may need them (Fig12).

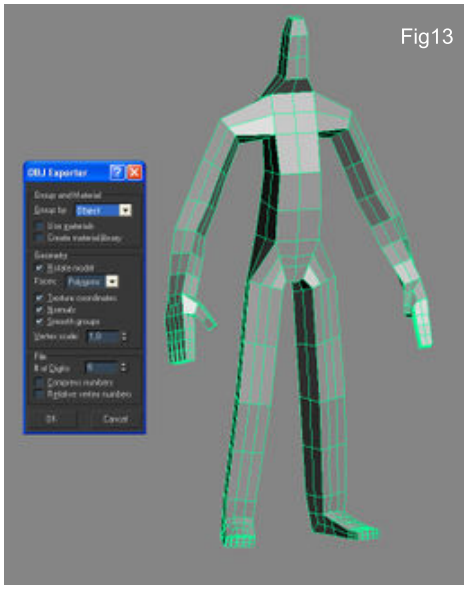

Fig11

We can now export the mesh into an .obj file, using File > Export Selected, and setting the dialogue as shown in Fig13.


Fig12

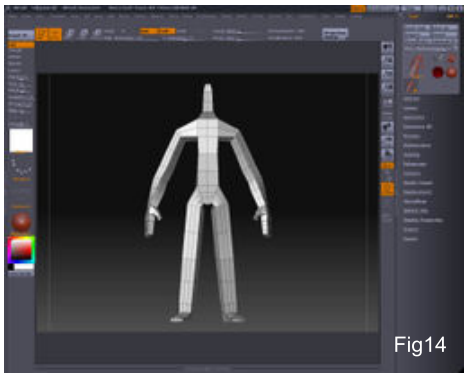
## Sculpting in ZBrush

Back in ZBrush we press T to deactivate 3D Edit mode, and then go to Layer > Clear in order


Fig13

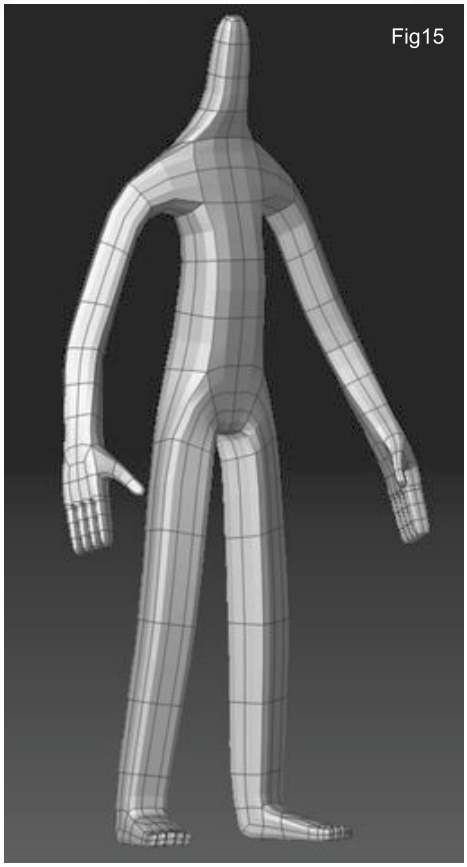
to clear the canvas. Leaving 3D Edit mode is needed here, because if we try to import an external model whilst a model is already active, ZBrush will try to import the external model over top of the selected one, and in this case it won't work because their vertices don't correspond. Clearing the canvas simply gets rid of the image of the model that printed to the canvas when we left 3D Edit mode.

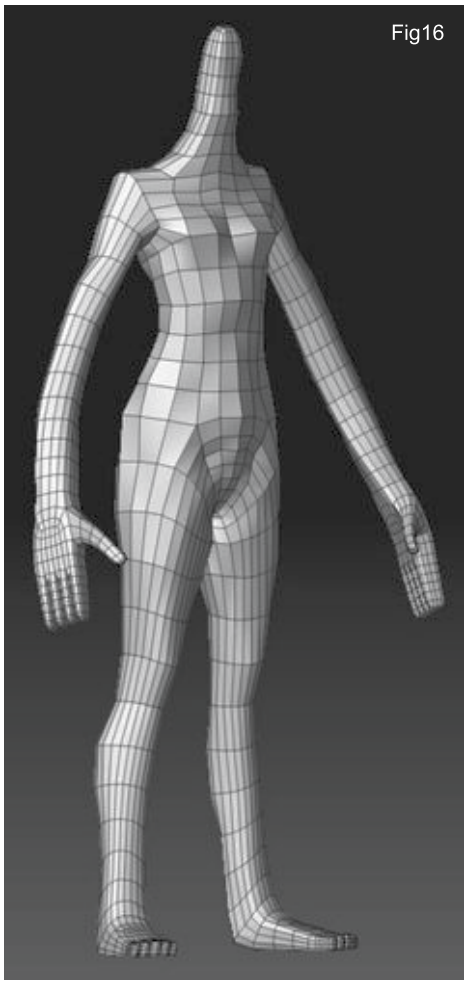
Now we are ready to import our new mesh. Go to Tool > Import and import the file. Then, with that model selected, drag on the canvas to put a copy of it on the canvas. Press T to go back to 3D Edit mode, and then we are ready to sculpt. We can also press Shift + F to show the wireframe on top of the mesh (Fig14). At this point there are no secrets or special tools that I use to work with the model; I mostly use the Standard, Smooth, and Move brushes.


Fig14

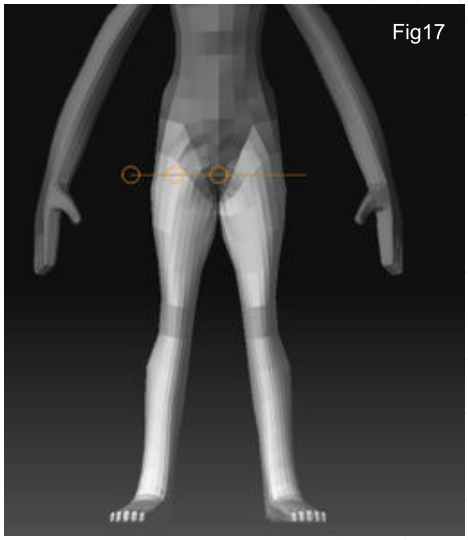
Before starting to sculpt we will divide the model once by pressing Ctrl + D (Fig15). We can now start the sculpting session. We will start shaping the legs and the overall body using the Standard brush and the Move brush, paying special attention to raising the shoulders and starting on the proportions and shapes (Fig16).

At this early stage I decided to close the legs of the character a little more. To do this we will use Transpose, and by doing so we can see what a great tool it is to reshape and adjust your models without having to leave ZBrush. Press R to go to Rotate mode, and then press Ctrl and click and drag on one of the legs. This selects (creates a mask for) the points in the leg, which will enable us to pose it. At this point we must make sure that we have X symmetry activated, but just in case we don't we will press X on the keyboard to activate it.


Fig15

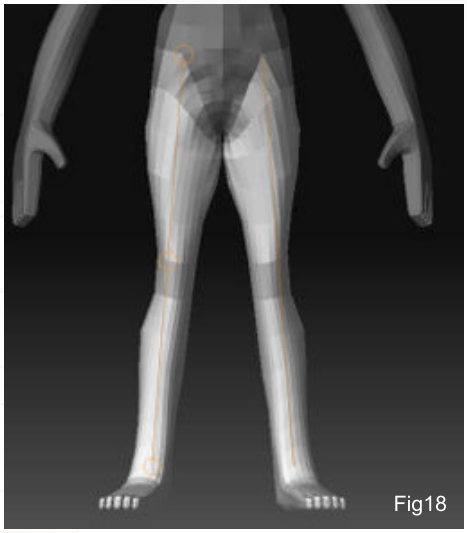

Fig16

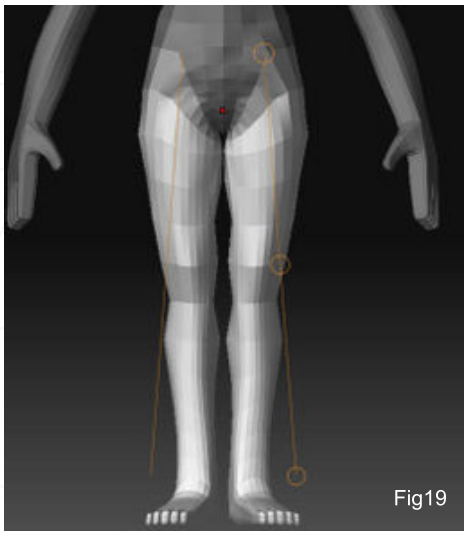
At this point we see that the legs are selected, but the mask is too blurry. So, deselect them (remove the mask) by holding Ctrl and clicking and dragging on an empty area of the canvas. Then set the Preferences > Transpose > Blur Strength to 2, and select the legs again (Fig17). We click on the pelvis and drag until we reach the foot of the character. A line will be created: this is the Transpose line that we will use to close the legs. Click in the middle of the last circle in this line and move it to the centre - the legs will now move closer together (Fig18 - 19).

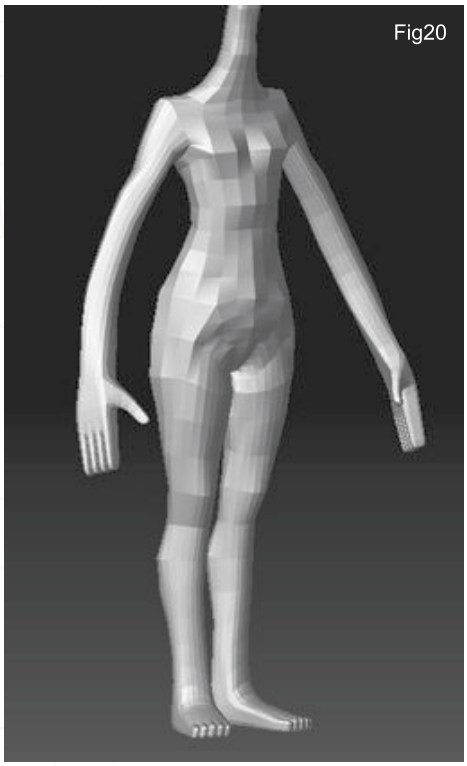

Fig17

We can press Q to go back to Draw mode and then deselect the legs (remove the mask), and we should have something similar to Fig20.

At this stage I decided that the model will be wearing some high-heeled shoes. So, using the same technique as before, we will select the feet and using Transpose we will rotate and scale them down a little. After that we can go back to Draw mode and hold Template > Ctrl to activate the Smooth brush and smooth the hands and feet out a little (Fig21).

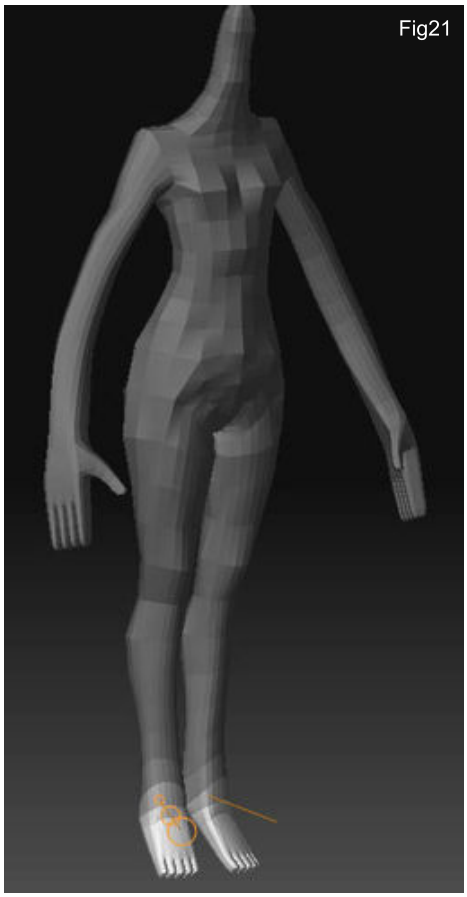

Fig18


Fig19


Fig20

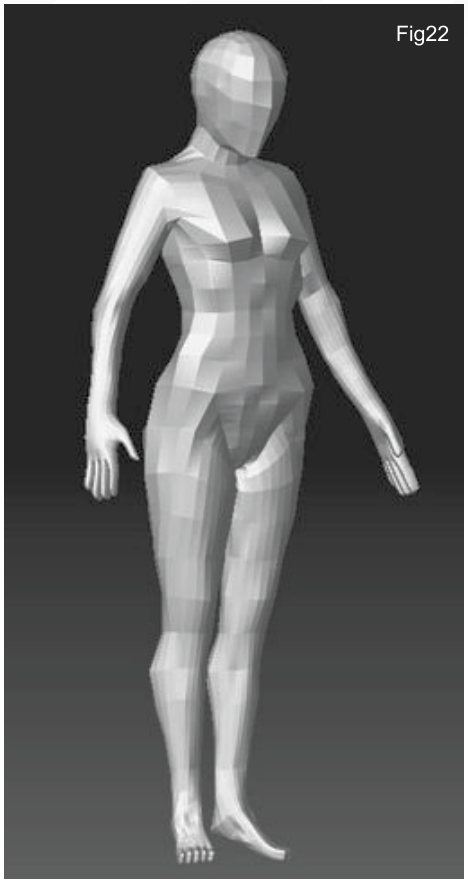
It's now time to start giving shape to the head and the torso. At this point it should start to be obvious that the model is a girl, not a guy (Fig22).

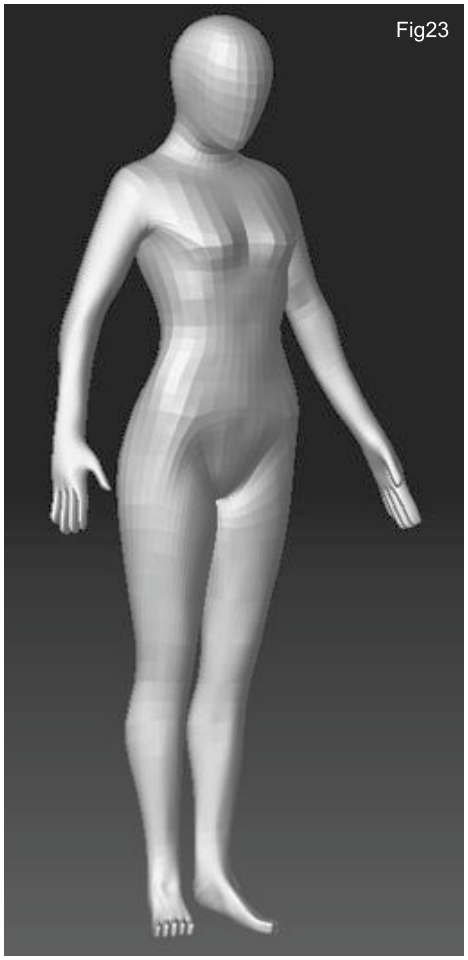
We can now divide the model once more in order to keep refining it. Press Ctrl + D again. Keep using the Standard and Smooth brushes to give shape and sculpt the body (Fig23 - 24).

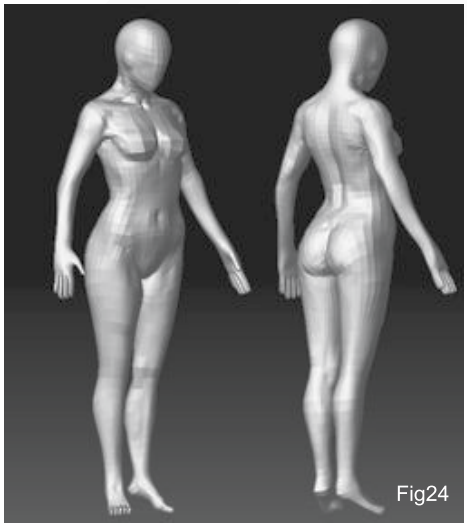

Fig21

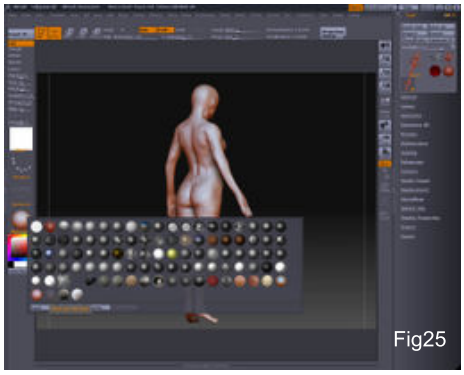
As you can see from the screenshots we are not using the preview renderer, but rather the fast renderer. We will now activate Render > Preview and then change the material to enable us to see the model more clearly (Fig25).

Once we're happy with the level of detail, we subdivide again and keep sculpting. I'm not doing anything fancy here - just using the Standard, Smooth and Move brushes. This is why ZBrush is so much fun; the process is straightforward and really feels artistic - just like drawing. We can now start shaping the more subtle details, such as the collar bones, the rib cage blending into the belly, hip bones, and so


Fig22


Fig23


Fig24


Fig25

on (Fig26 - 27). We keep on sculpting the mesh; start defining the node and eye socket areas and give more detail to the sternum, clavicle and shoulder areas (Fig28). Fig29 shows what the model should look like at this point. We are now going to start shaping the feet. We hold Ctrl + Shift and drag a rectangle across the feet - this will hide everything but the feet (Fig30).

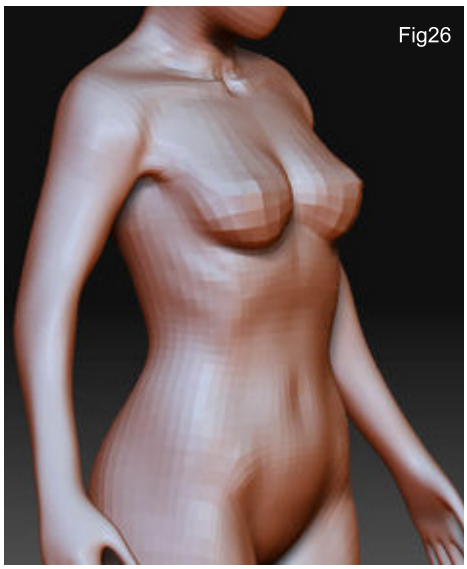
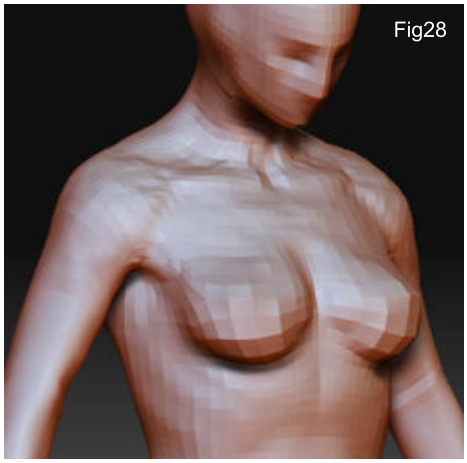
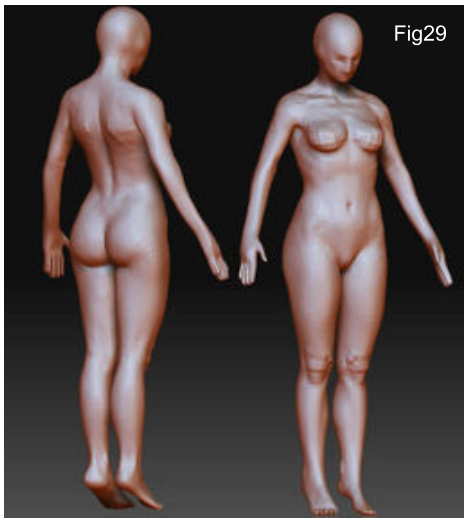

Fig26


Fig27

Going back to the overall model, we are now ready to divide once again and to keep adding and refining the shape of the girl. Notice the detail of the back and how we are start to


Fig28

achieve some nice detail in the belly, rib and breast areas (Fig31).

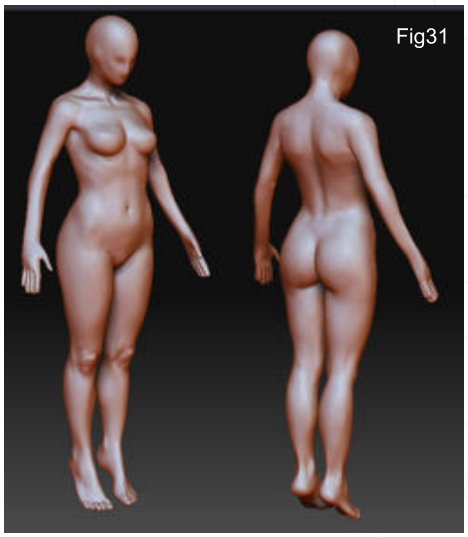

Fig29

We can now work on the overall shape of the arms and keep refining some areas, such as the hip and belly areas (Fig32).


Fig30

## Sculpting II (The Face)

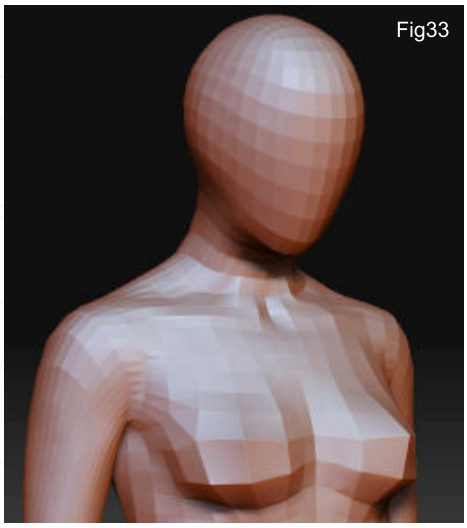
Okay, at this time I think it's a good idea if we can start getting some detail to the face, so we'll go back one level of division by pressing Shift - D.


Fig31

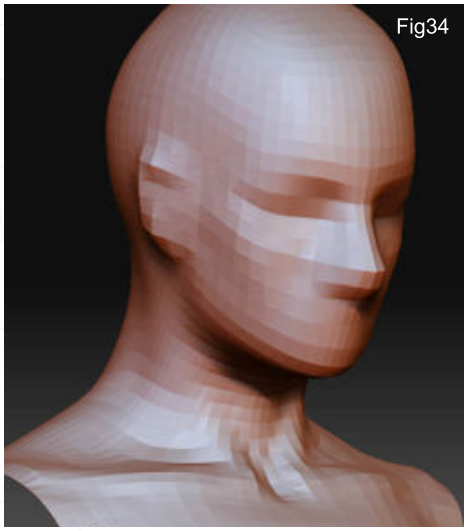
Earlier, we started shaping the eyes and nose a little, but I didn't really like where that was going. So now, using the Smooth tool, I can smooth all of that out and start the face again (Fig33).


Fig32

We will hide the rest of the body and just keep working on the face for now. By using the usual brushes we will start shaping the face (Fig34). The head, and especially the face, is a very difficult and delicate area. Plus, with our model being a woman makes it even more difficult for us, so we have to pay special attention so as not to make it too manly...


Fig33

At this point we can go up one level of division and keep working on it, as shown in Fig35.


Fig34

We are now going to divide the model once more to get some more definition on the face. To do this, we firstly need to “un-hide” the model by holding down Ctrl - Shift and clicking on an empty area on the canvas. Then press Ctrl + D to subdivide the model, and hide the rest of the model again. We can hide everything but the face by activating the new lasso tool, and then


Fig35

holding Ctrl - Shift and dragging a lasso around the face. Keep modelling the face, still using the same few brushes. Notice again that, even at this stage, you don’t need lots of tools to create this model!

We will now need to add some detail to the lips, trying to give a feeling of flesh around them. We can also give shape to the eyebrows, the eye sockets and the nose (Fig36). Moving on, we can start giving shape to the eyelids. This is a very delicate area so you have to be careful here. You can see the evolution of the eyelids in Fig37 - 39. After this we will start reshaping the ears, still using just the standard and smooth brushes (Fig40 - 41).

Here we have worked on the overall model a little further; refining areas and adding some


Fig36

small details (for example behind the knees) and working on the hand - all in the very same way that we did with the rest of the body (Fig42).


Fig37


Fig38


Fig39

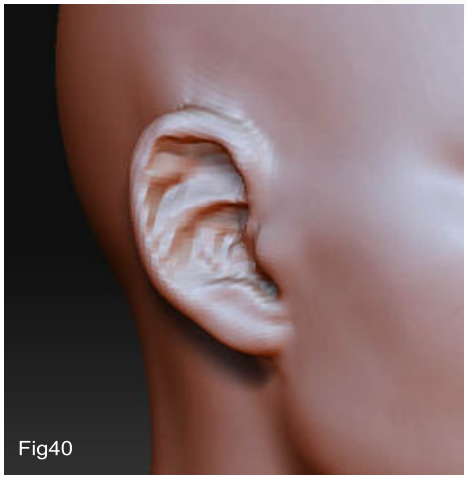
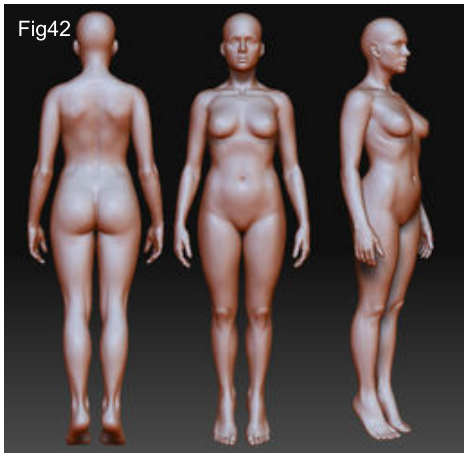

Fig40


Fig41

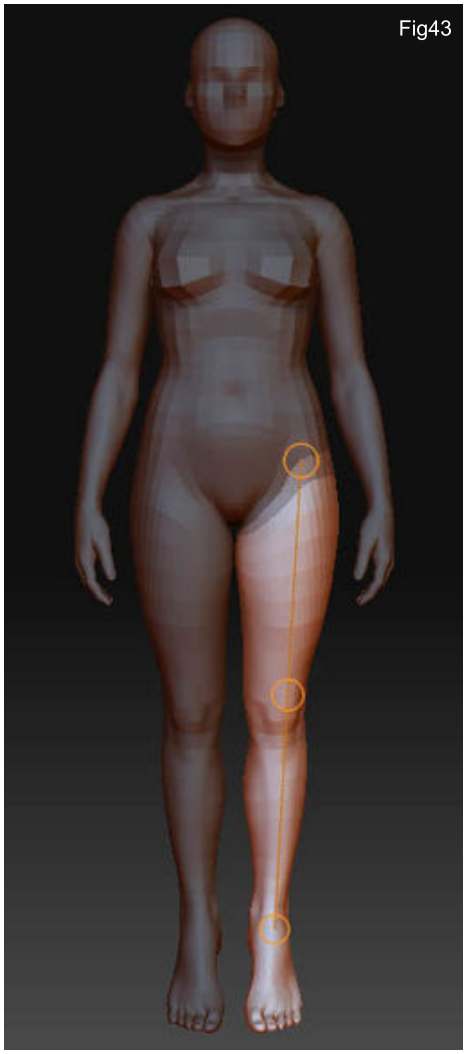
## Posing

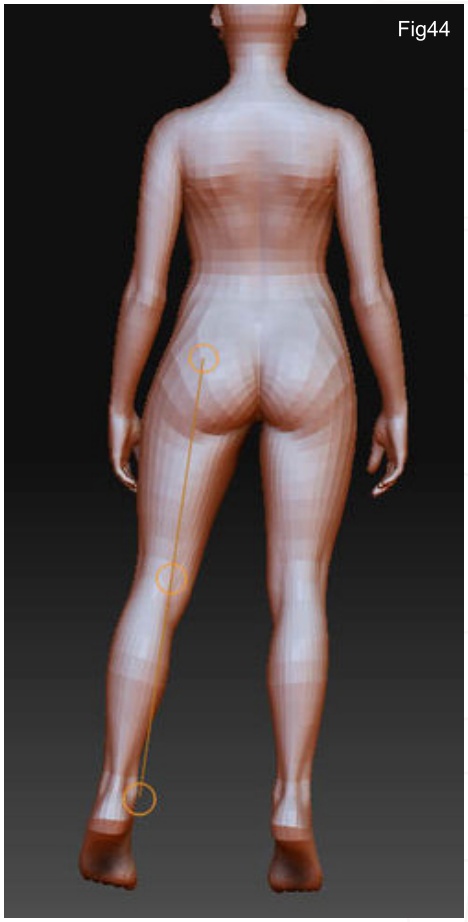
The next step now is going be the posing of the character, and adding some props. First of all, make sure to save the file (just in case we don't like the pose that we get and want to be able to go back to the original version of the model). For the posing we are going to use Transpose once again, in the same way that we adjusted the model at the beginning of this tutorial. The trick here relies upon finding an interesting pose/shape.

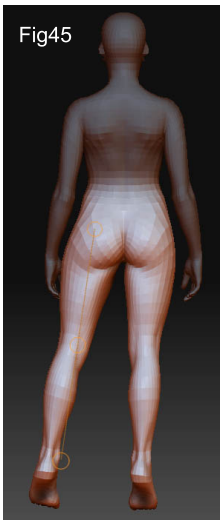

Fig42

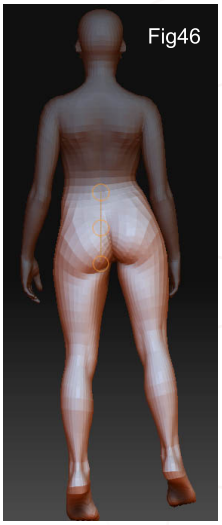
At this point we have a model with seven levels of division, and we have nearly reached three and a half million polygons. We will move down to the 3rd level of division to pose the model. By doing this we will be able to work with fewer polygons, and all of the detail will be updated to the new pose once we move back up to the higher levels of subdivision.

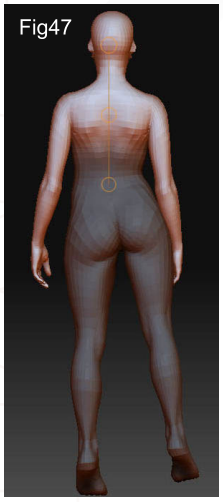
If X symmetry is still active then press X to deactivate it, since we won't pose the model in a symmetrical way. Then press R to go to Rotate mode, hold down Ctrl and drag on the leg to apply a selection mask (Fig43). Click and drag on the leg to draw the transpose line, from the hip to the foot. Then rotate the leg by clicking on the middle of the bottom circle and dragging, until we have something similar to the examples given in Fig44 - 52. We can then keep on posing the character, as seen in the next set of images.


Fig43


Fig44


Fig45


Fig46



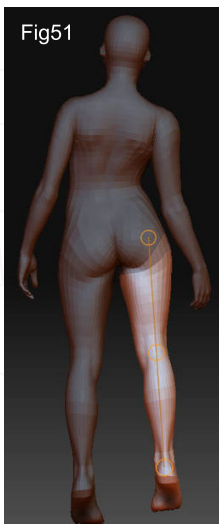








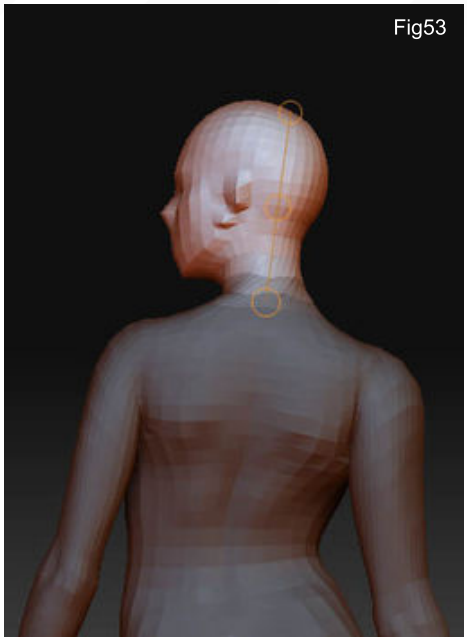








Rotate the head in a similar manner; apply a selection mask and create a transpose line, which you can use to rotate the head (Fig53). The rest of the model is posed in much the same way.

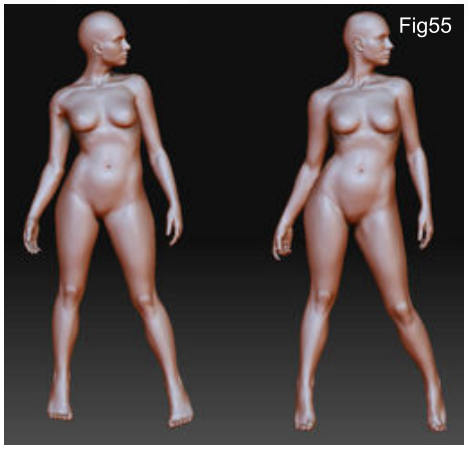



Once we have the final pose of the model, we will have to refine some areas where the skin is now folding, where wrinkles are appearing and where some bone structure is pushing the skin in ways that weren't happening before. There's some skin folding around the rib cage and also some distortion in the shoulder and some other areas. A little bit of brushing takes care of those problems, though (Fig54 - Fig55).

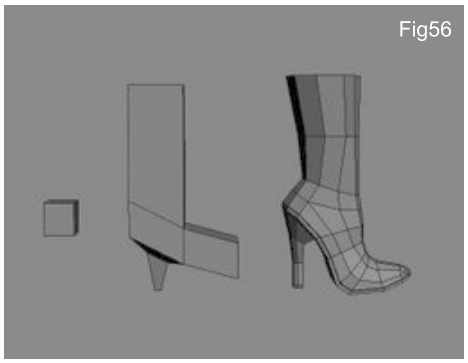
## Clothing

Clothing is the next step. We'll start with the boot, which will be based on a cube and will use a simple image from the Internet as a

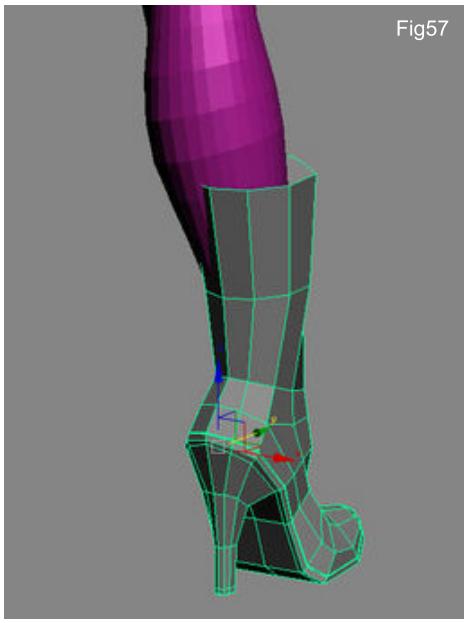


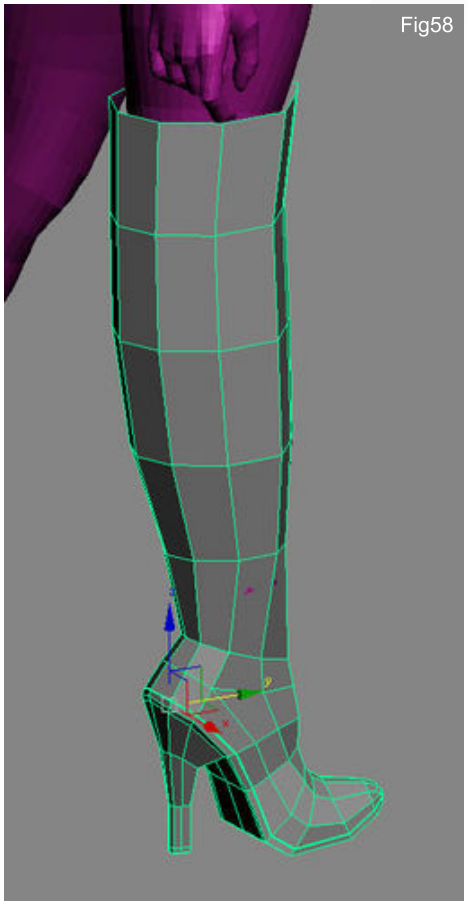




quick reference (Fig56). In ZBrush, use Tool > Export to export the model at the third level of subdivision, and then take that model into 3ds Max where we'll adjust the boot mesh around the model (Fig57 - 58).




Now we can export the boot from 3ds Max using File > Export, by choosing .obj format and setting the dialogue as we did earlier on at the beginning of this tutorial.



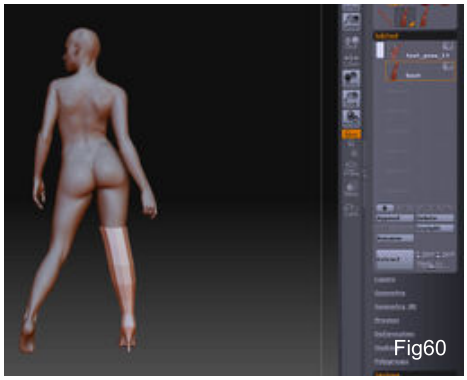

Fig58

Back in ZBrush, choose the simple brush tool and then import the boot using Tool > Import. Changing to the simple brush before the import ensures that the boot model doesn't overwrite


Fig59

an existing 3D model. Then choose the girl model as a tool and draw it on the screen. Finally, use Tool > SubTool > Append. We now need to select the boot from the pop-up list. Now the boot is a 'subtool' of the model of the girl and appears in the viewport (Fig59). To edit the boot, we need to click on its entry in the SubTool list - it will become a lighter colour while the girl becomes darker (Fig60). Divide the boot to seven levels of subdivision and sculpt it as desired. In addition to my normal brushes, I also used the Pinch brush to achieve in the wrinkles.

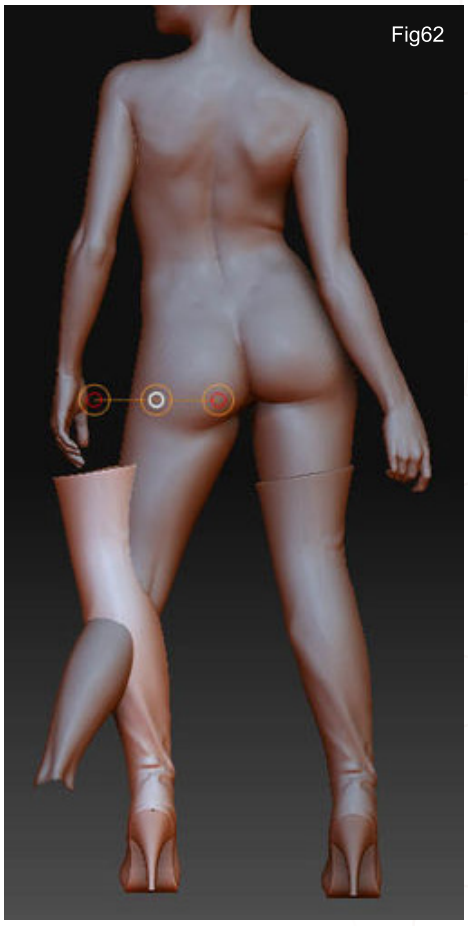
Fig61 shows a screenshot of the boot after adding all the details (Fig61).


Fig60

Now we will add the second boot. With the first boot still selected in the SubTool list, press Tool > Clone, and then add this new boot to the model of the girl using Tool > SubTool > Append. The new boot appears in the list of the subtools, but we can't see it in the viewport because the new boot is on top of the other boot. So, with the new boot selected in the SubTool list, we press W to go to Move mode, and we can then move the new boot by clicking and dragging inside the middle circle of the transpose line (Fig62).

Now we want to mirror it. For that we will first need to go to the highest level on the boot, by going to Tool > Geometry > SDiv, and by moving the slider to the right until we reach the seventh level. Then, click on the Del Lower button, which is just under the Sdiv slider. This will delete the lower levels on the boot. We need to do this in order to apply the mirror modifier tool to flip the boot over, which is done by going


Fig61


Fig62

to Tool > Deformation > Mirror. Once we've flipped the boot, we can then move it to where we want it (Fig63). We now need to recreate the lower subdivision levels that we just deleted, so press Tool > Reconstruct SubDiv a few times until we got our lowest level back. Notice how the slider for the levels is back to seven levels. (Fig64). Holding Ctrl - Shift, drag across the lower section on the boot to hide everything outside of that area. This gives us a shorter left boot than the right (Fig65).

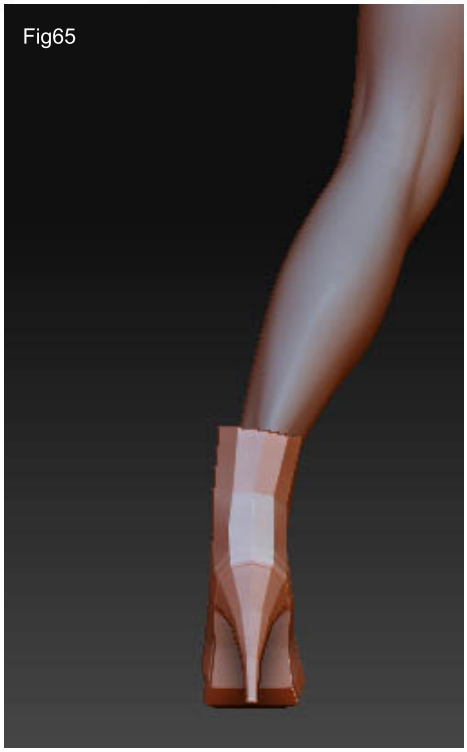

Fig63

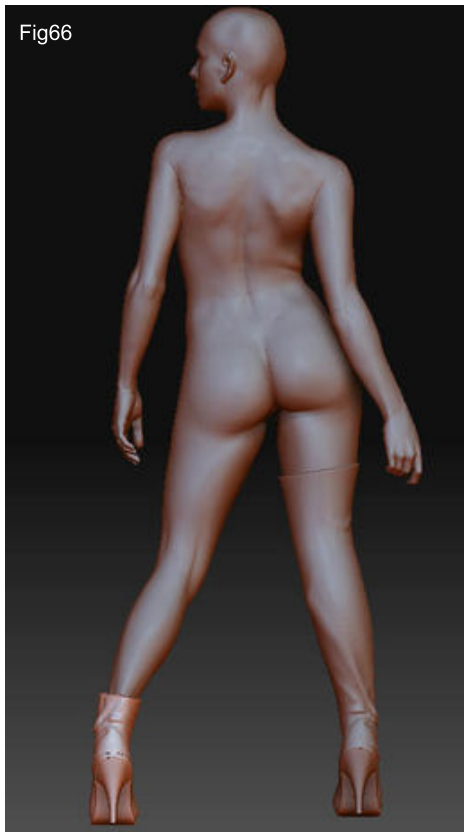
Then go back to Drawing mode by pressing Q, and use the Move brush to adjust the boot to the leg. We can then go up in our division levels, where we'll see that all of the detail is still there (Fig66).


Fig64

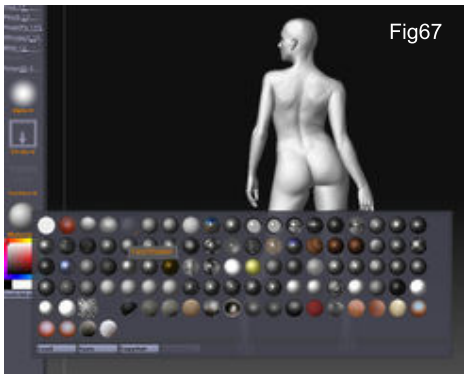
## Texturing

At this point we have finished the model and we're ready to paint the textures for the girl. We'll be using the capabilities of ZBrush to paint directly onto the polygons. In the Template > Tool > Subtool menu, make sure the mesh of the girl model is active. Then, in the Material Fast Shader material, we will see the girl all in white (Fig67).


Fig65


Fig66

Activate polypainting by clicking on Tool > Texture > Enable UV, and press Tool > Texture > Colorize. Then select a skin colour from the colour picker on the left, and press Color > Fill Object to apply that colour to the model (Fig68). To start painting some colour and pores on the skin we will use the standard brush, making sure that the ZAdd button is deactivated and that


Fig67

the RGB button is active, setting an Intensity of about 15 for the brush (Fig69). Next we will use the Alpha brush (Fig70). Instead of the DragRect stroke, we will use the Colorized Spray stroke (Fig71). With just those settings,


Fig68

and using different colours for skin tones, we'll paint the entire model until we get something similar to what is shown in Fig72.


Fig69


Fig70

We are now ready to export our model, Colour and Displacement maps to 3ds Max. We'll first export the Color map, so go to the lowest level of division to create some UV maps for the mode, by pressing Shift + D until reaching the first level of subdivision of the model, then press Tool > Texture > AUVTiles. This will generate a proper set of UV's in order to create our other



Fig71

maps. Now we can create the Color map by clicking on Tool > Texture > Color to Texture (Fig73). Once we've created the texture, it will be automatically selected by ZBrush. Now we


Fig72

go to Texture > Flip V to flip the texture in the V direction, otherwise we will have to do it later on (Fig74). Then, in the same dialogue, we click on Export and we save the texture map as a TIF file (Fig75).

## Displacement Map

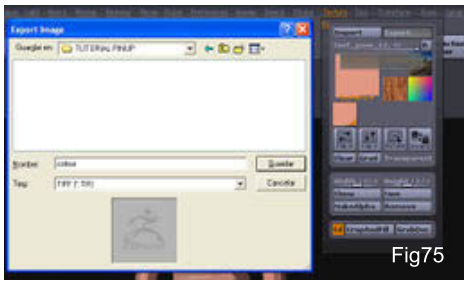
Next is the Displacement map. Since we are not going to animate the model I will export a medium resolution version of the model. In this way I make sure that the Displacement map is going to be very, very accurate. We will go to the fifth level of division now and then


Fig73

press Tool > Displacement and set the options as seen in the image. Finally, we click on the Create DispMap button (Fig76).



Fig74


Fig75

Once the map is created, we will find it in the alpha maps; select it, and then click on Export: (fig77)

## Exporting the Model

Now we have to export the model of the girl by going to Tool > Export, and we need to save the .obj file. The next task is exporting the boots, so we choose one of them from the SubTool palette and set it to subdivision level six. Again, since we won't be animating this model, we can just export the high-resolution mesh to make it easier to make a render. Once we finish

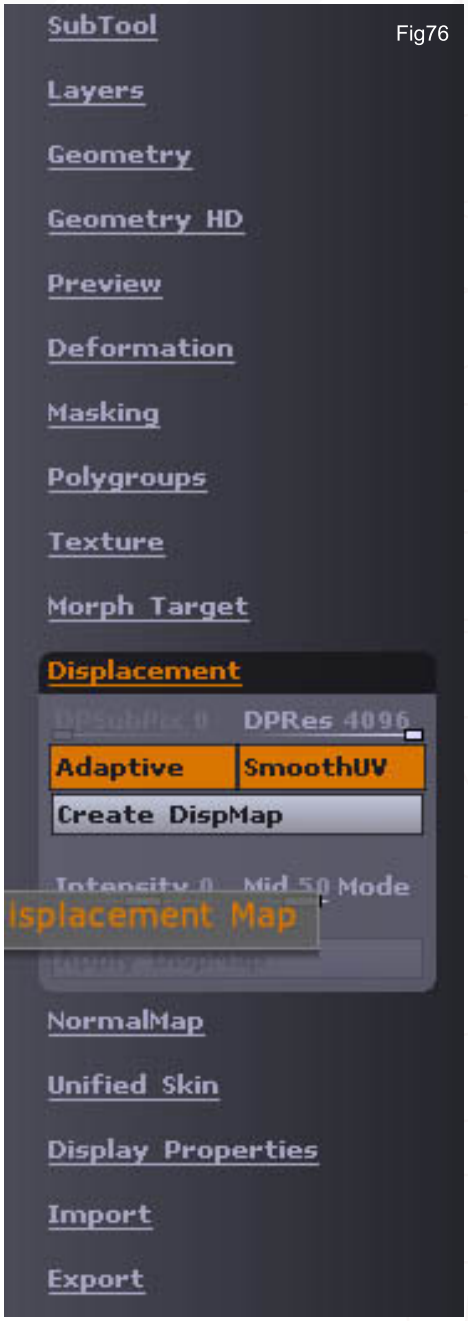


Fig76


Fig77

exporting the two boots we can then go back to 3ds Max, after saving our file in ZBrush first.

At this point we will load all of the .obj files into 3ds Max, and then we will build the rest of the props within 3ds Max.

## BACK TO 3DS MAX

The next thing to do is to load the Color and the Displacement map on the model, as seen in the image. Notice that I'm using V-Ray as the render engine here, so I will use a V-Ray Disp. modifier. First however, I will add the Displacement map that we created in ZBrush into an empty slot in the material editor and set the Tiling in V to -1 and the Blur area to 0.01. Then go back to the original slot and drag and drop it into the V-Ray Disp. modifier (Fig78). We have now to set the Amount value for the displace, which in this case is 6. Remember to set the Shift to a value of less than -2, so in this case we use -3 (Fig79). Now create a new material for the PINUP and add the Color map to the Diffuse colour slot (Fig80).

The next step will be to create an interesting lighting scheme. In this case I used two Area lights, as shown in the Fig81, and created some materials for the rest of the objects.

We are now ready to render! The final render can be seen on the following page, after some colour tweaking in Photoshop®.

Thanks to everyone for reading this; I hope you've found this tutorial interesting! ZBrush is a very powerful software. By using just a few brushes you can create some incredible images and models. As with everything in this life however, it may take some time for you to create something that you find really cool, so don't get discouraged! Keep trying new things and you will be amazed at just how fast you learn!

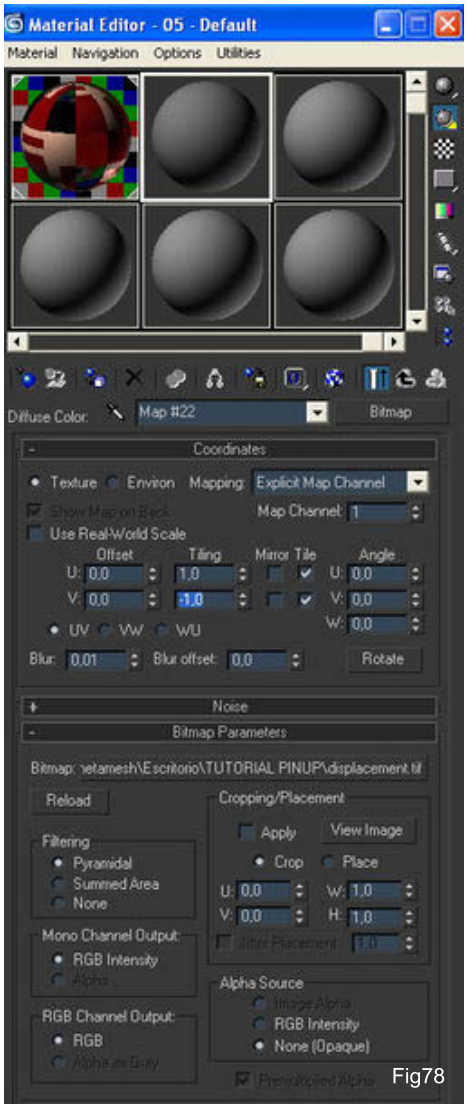


Fig78



Fig80

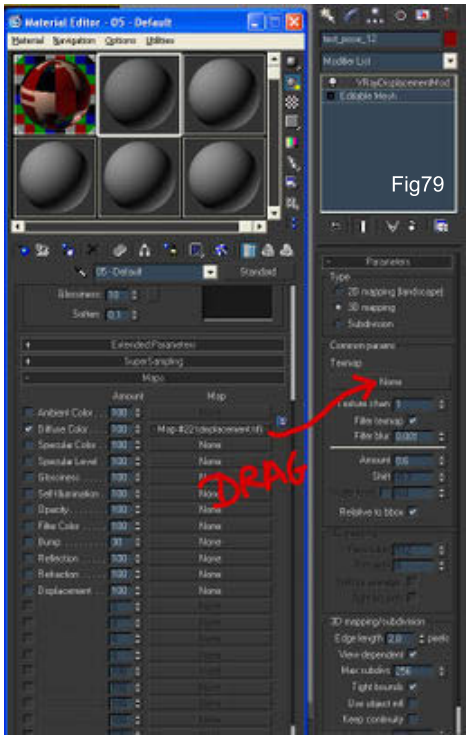
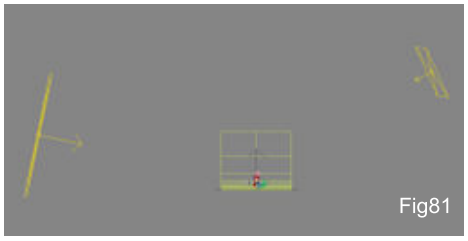


Fig79


Fig81

ALEX HUGUET
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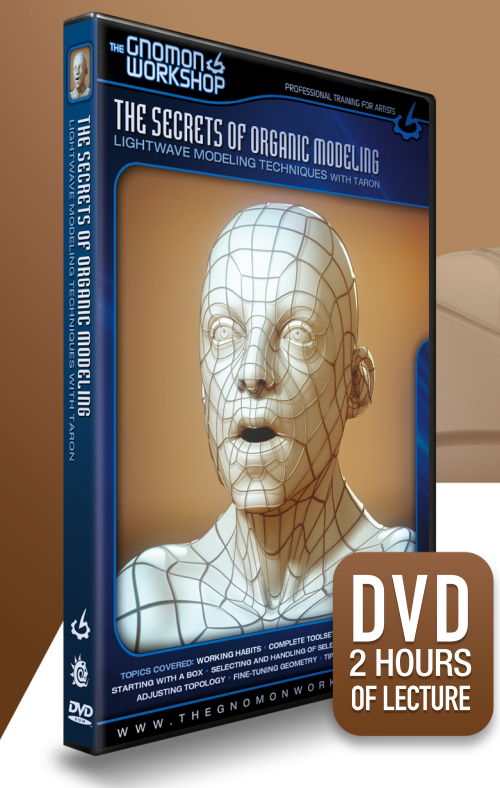
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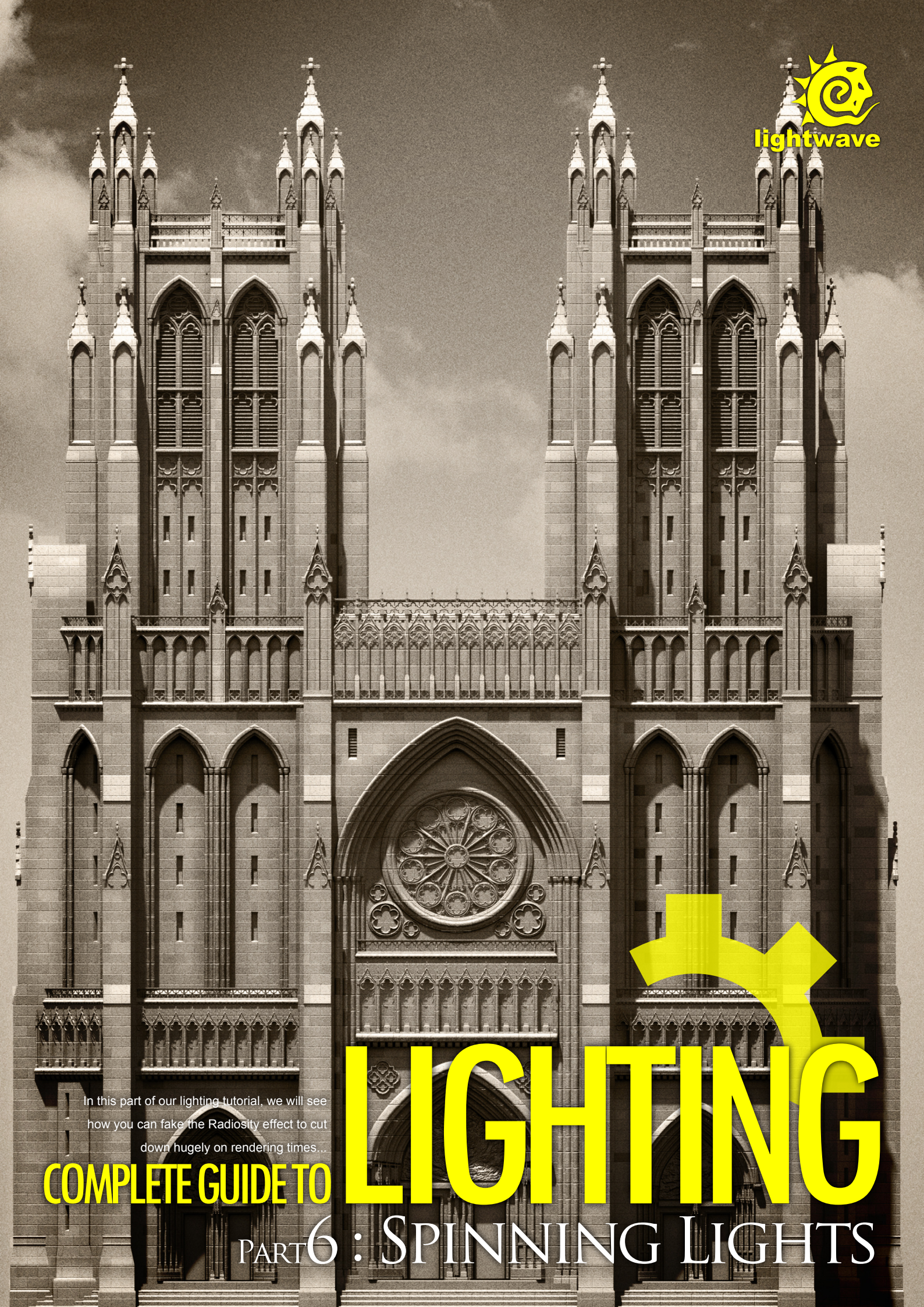



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In this part of our lighting tutorial, we will see how you can fake the Radiosity effect to cut down hugely on rendering times...

# COMPLETE GUIDE TO LIGHTING

## PART 6 : SPINNING LIGHTS

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## PART 6 : SPINNING LIGHTS

## CREATED IN:

LightWave

## 'SPINNING LIGHTING TRICK'

In the previous chapter, some basic principles of faking radiosity where introduced; static and animated lights where used to simulate it. Whilst the results where modest, the 'Spinning Lighting Trick' proved itself to be a viable GI solution. In this chapter, we will go deeper into the Spinning Lighting Trick; this will allow us to attain higher quality lighting and lower render times for much more complex objects and scenes.

## THE IMPORTANCE OF SPINNING LIGHTS

So far, our goal has been to create a realistic daylight scene. This chapter will demonstrate how to attain much better results with lower render times. Attaining low render times with high quality results is very important. A LightWave hobbyist is more likely to produce scenes with thousands of polygons, because lighting such scenes is not much of a problem when the user is not normally tied to a deadline. However, most professional CG productions require the rendering of millions of polygons under tight deadlines and resources. For such situations GI is, in the majority of cases, not an option (especially for a small studio producing film/TV shots). This is when the Spinning Light Trick proves itself to be useful. Renders done with it will be easier to tweak by composers, making it also a viable solution for elaborated pipelines. The combination of these techniques, along the 999 render nodes available inside LightWave, makes LightWave a real production booster. As a result, studios can deliver high quality shots under tight deadlines for film and television (Fig01 & Fig02). There are many ways of achieving a re-usable Spinning Lighting Trick setup. The following is one that I personally use for high poly objects. It works great for product shots, animation, and even some complex arch-viz objects! It is the result of mixing the knowledge of many talented authors, such as Timothy Albee, Dave Jerrard, Nicholas Boughen, and so on. Therefore, I encourage you to try it out and improve it to suit your own individual needs.






## MODELER

Positioning a few lights inside Layout is fairly easy. However, positioning a few dozen of them inside Layout is more of a problem! We can however create a mesh that will hold up one light per polygon. This way, each light can be positioned in a more precise way. Open Modeler and click on the Box button tool. Before you make another click, press the N key - this will open the Numeric Panel, create a perfectly centred box, and position it at the origin. Press Enter to confirm. Subpatch it by pressing the Tab key. This will transform our box into a ball. Subdivide the Polygons by pressing Shift + D. The Subdivide Polygons menu will appear. Inside it you can specify what type of subdivision you want. We want to make this ball have more polygons without losing its form, so select Metaform from the Subdivision Method, leave the Fractal value on 0.0%, and then click OK. This will create a ball made up of 16 sides. Subdivide it again to get a ball made of 96 polygons (Fig03). Set your viewport to Back, Front, Right or Left. Then set its mode to Wireframe. Select the top half sphere polygons. Expand the selection once by pressing Shift + }. This will select an extra row of polygons. We want to keep these polygons and eliminate the ones at the bottom, so invert the selection by pressing Shift + ". This will select the lower set of polygons. Press Delete to eliminate them (Fig04).

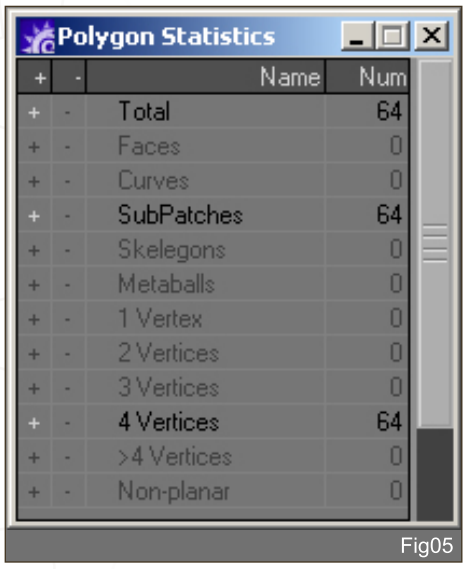
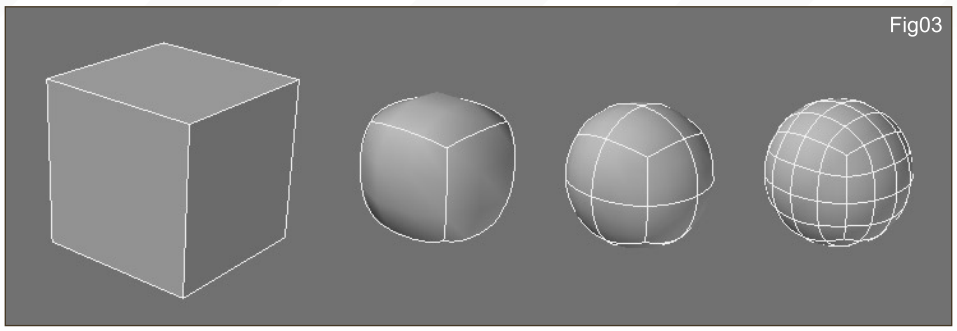
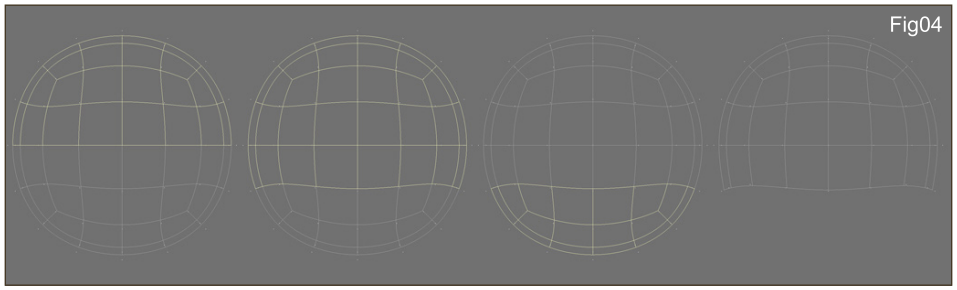
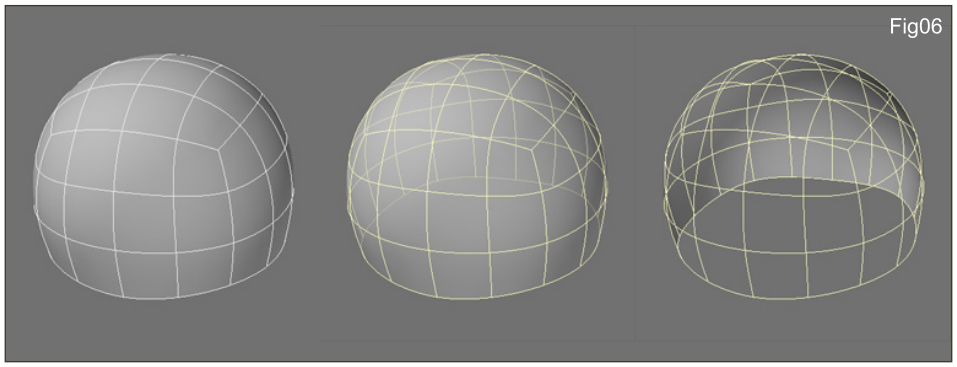


Fig05


Fig03


Fig04


Fig06

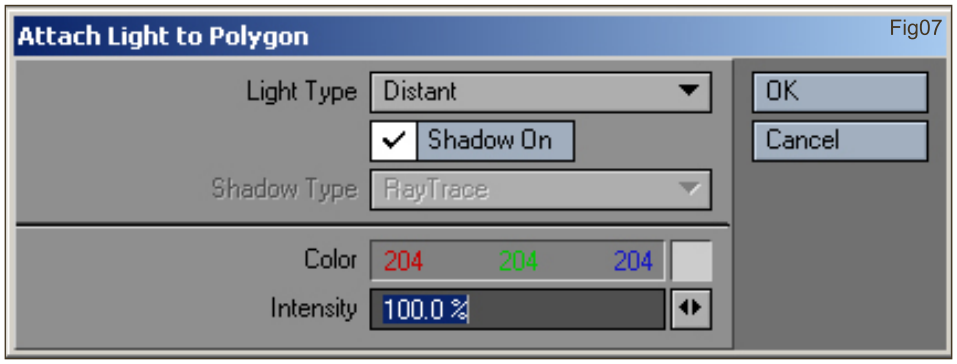


Fig07

Let's make sure now that we have the correct amount of polygons we need. Press W and look at the Total number of polygons. There should be 64 subpatched polygons, each one made of 4 vertices. Save the object (Fig05). Set your viewport to Perspective and the mode to Textured Wire. The visible side of the polygons is facing outwards; the transparent side is facing inwards. In order for the visible polygons to face inwards, and vice versa, we must flip the polygons. Select all the polygons by pressing the ] key, then press the F key to flip them. Keep the selection active (Fig06). Once our dome is ready, it's time to attach Luxigons to it. Luxigons are 'markers' that will allow Layout to position lights on our mesh. Go to the Setup tab on the top menu. Press the Add Luxigon button on the left of the Layout Tools' menu. The Attach Light to Polygon pop-up menu will appear. Leave all values as they are, and click OK. The pop-up window will close. Save your object and send it to Layout (Fig07).

## LAYOUT

Let's now import our dome, with Luxigons, into Layout. Load it into Layout and click on the Items tab at the top of the menu. Select Convert Luxigons from the Lights drop-down menu. The Add Luxigon Lights pop-up menu will appear. Leave the default option and click OK. A grid of Distant lights will appear (Fig08 - 09).

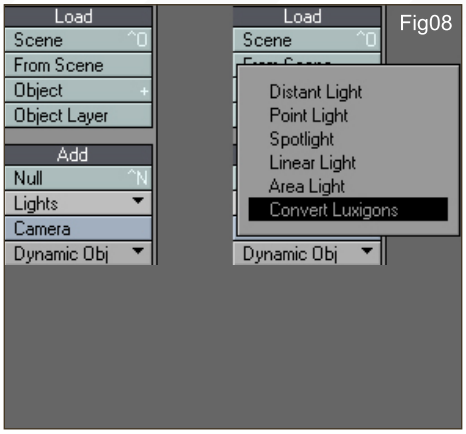


Fig08

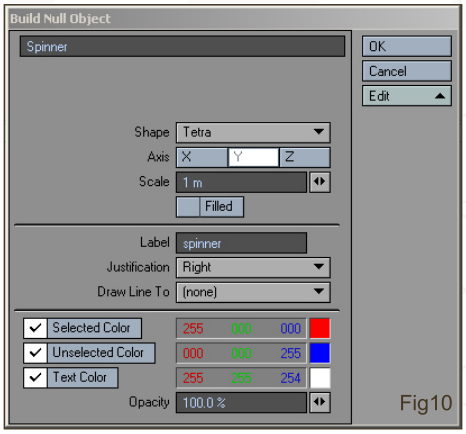
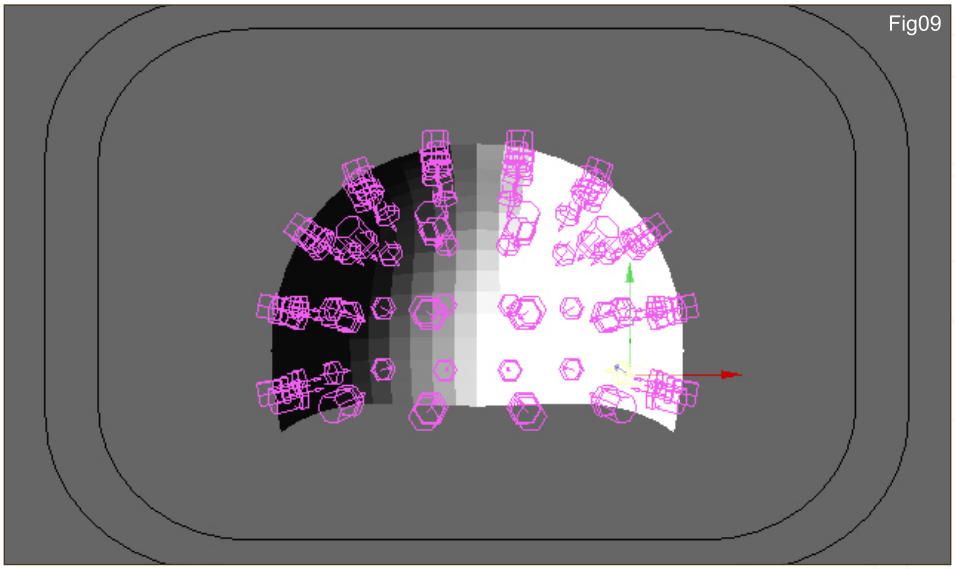


Fig10

## ADDING A NULL

We need to spin the 64 lights at the same time. This can easily be done by parenting the lights to a null object. To create a null, go to the Items tab and press Null, under the Add section. The Build Null Object pop-up window will appear. Change the default "Null" name to "Spinner". Press on the Edit drop-down menu to show more Null options. You can add a custom geometrical form to a Null object for easier manipulation. This can be done by choosing one from the Shape drop-down menu. Chose Tetra. The Filling option will become available. Press on it to activate it. Set "Spinner" as the Label. Set the Justification to Right. The Select Color option allows you to specify colours for the different selection modes. I usually set the Select Color to red (255,000,000) and the Unselected Color to blue (000,000,255). Furthermore, I like to change the Text Color to white (255,255,255). Opacity is the last option of this menu; whilst leaving this option at 100% could be a bit distracting, 50-70% works well enough (Fig10 - 11).


Fig09

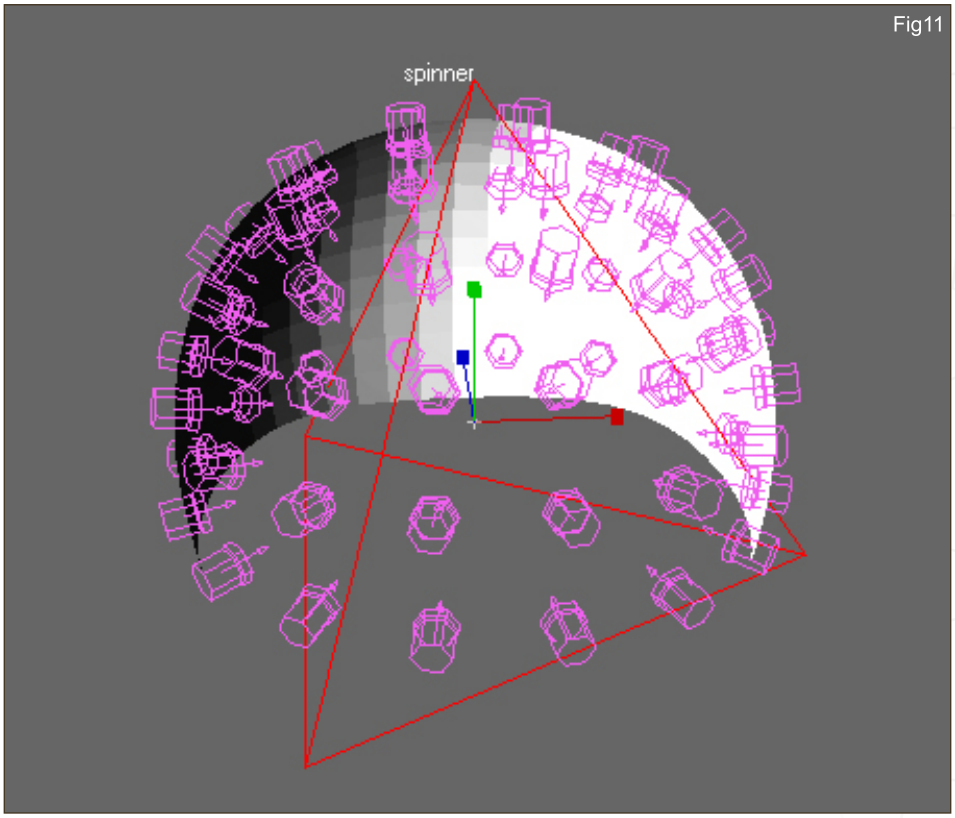


Fig11

## DOME SIZE

As you will realise, the size of our dome is just 1 metre in diameter. That's because we initially created a 1 metre subpatched box in order to create the ball. In this exercise, we will not use the sphere itself to light our objects - lights will do that for us. However, we can use the dome itself to manipulate the size of our lighting rig, since the lights were parented to the sphere when we added the Luxigons. Simply select the sphere and adjust the Scale to 20 metres in X, Y and Z (Fig12).

## HIDING THE DOME

Whilst the dome has been useful in re-sizing the lighting rig so far, it must not appear on our render for the time being. Therefore, select the Dome and press P. This will bring up the Object Properties menu of the dome. Go to the Render Tab. Here you can specify many options that will affect the rendering of this specific object. Select Unseen by Rays, Unseen by Camera and Unaffected by Fog. Unselect Self Shadow, Cast Shadow and Receive Shadow. This will make our dome visible in Layout, but invisible to light inside the scene. You can also set the Object Dissolve value to something lower than 100%. This will make the object partially, or completely, transparent (Fig13 - 14).

## PARENTING THE DOME

Select the dome object and press the M button.

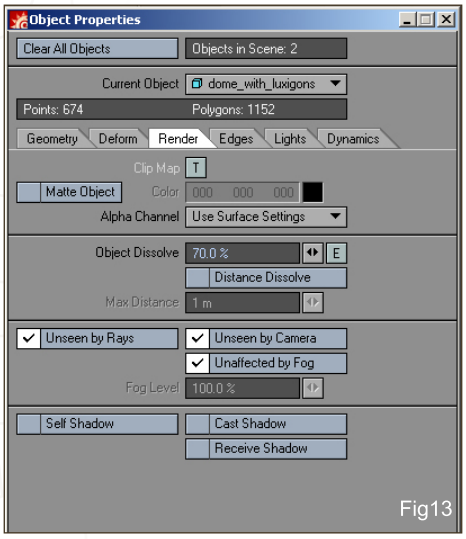


Fig13

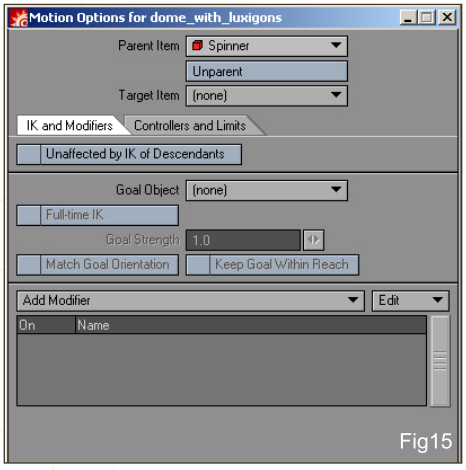


Fig15

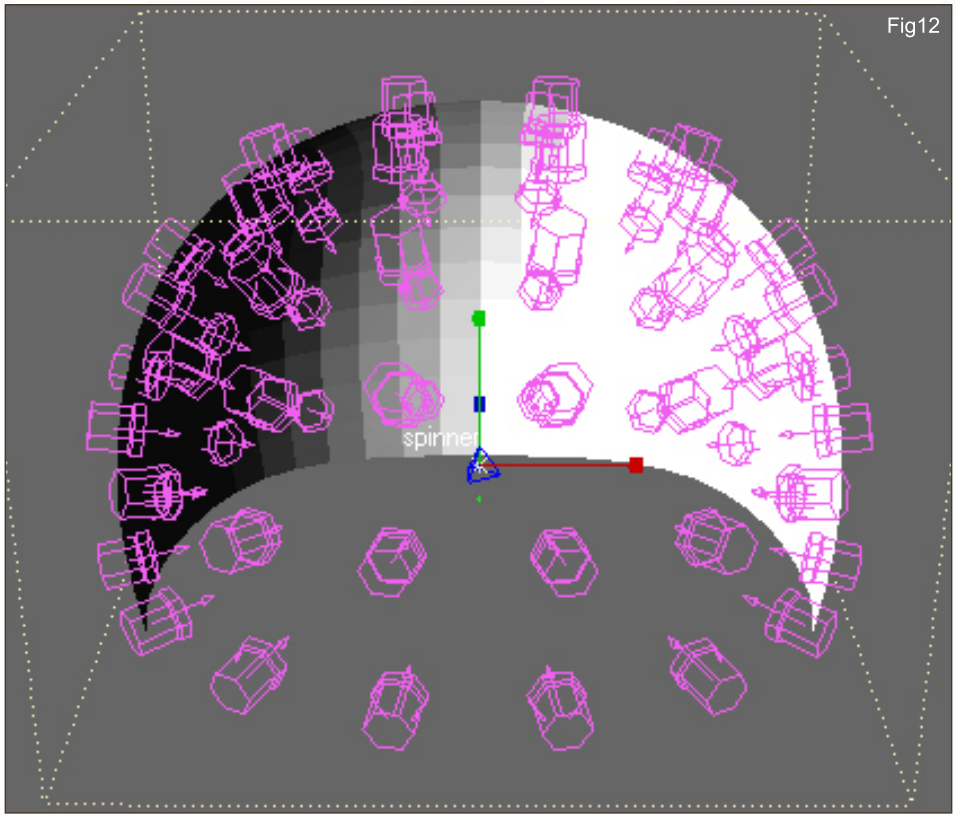


Fig12

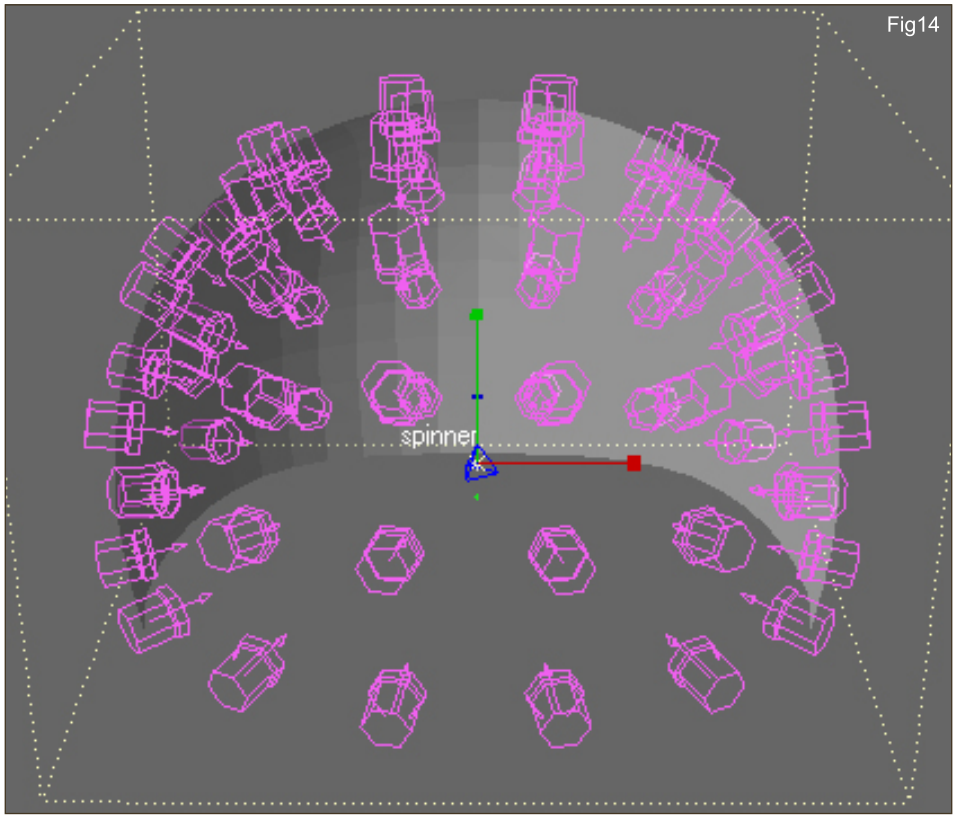


Fig14

This will open the Motion Options menu for the dome object. Select Spinner from the Parent Item drop-down menu (Fig15). This will Parent our dome to the Null object, named Spinner. With this, all the lights will be parented to the sphere, and the sphere will be parented to the Spinner. If this makes your head dizzy, don't worry (it's easier to understand this from a graph than it is to explain it in words). So let's take a closer look at the Schematic View inside Layout...

## Using the Schematic View

In previous chapters, we discussed the importance of the Schematic View; the time has now come to learn more about it. We are now dealing with 64 lights under a simple hierarchy. Select one of the viewports and set it to Schematic. Each of our lights will be shown in pink by default; objects will be shown in blue. By right-clicking on the icons you can change their colour and name, and gain direct access to the Item Properties and Motion Options. I gave a colour to each of the rows, and made a simple vertical arrangement for easier selection (Fig16 - 17).

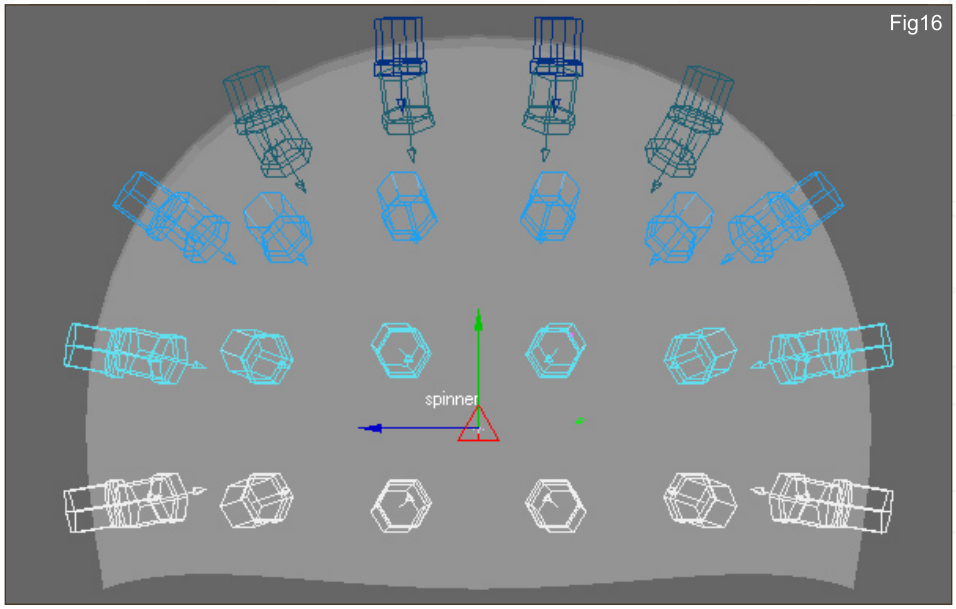


Fig16

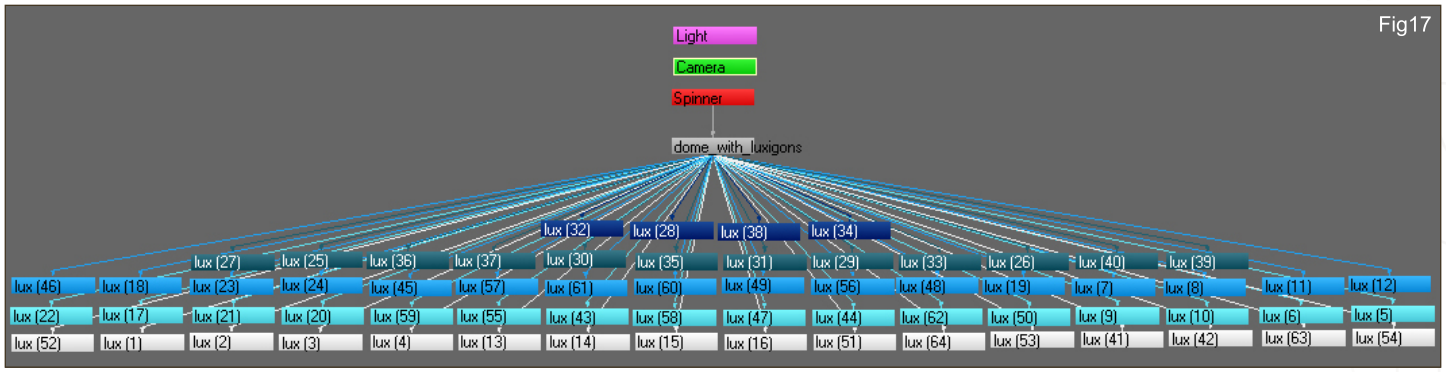


Fig17

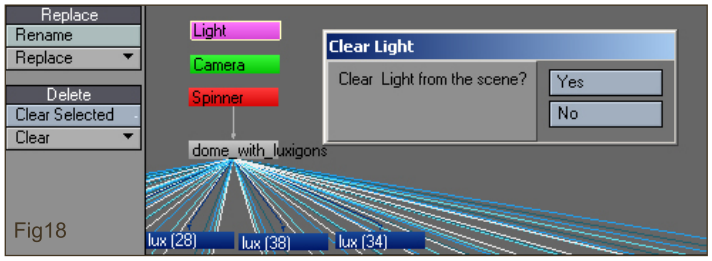
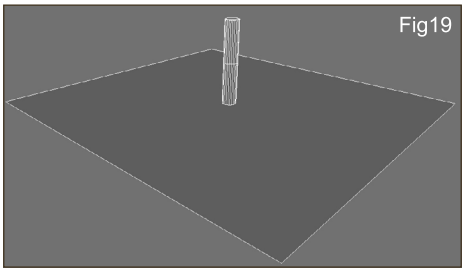


Fig18


Fig19

## Default Light

Any scene that is created comes with a default light. When we use the Schematic view, we can discover if we have elements that should not be there. In this situation, our default light is still inside the scene. Select this light. Go to the Items tab at the top, and click on the Clear Selected button. This will delete the light. You can also press the - key (hyphen key) to delete items inside your scene (Fig18).

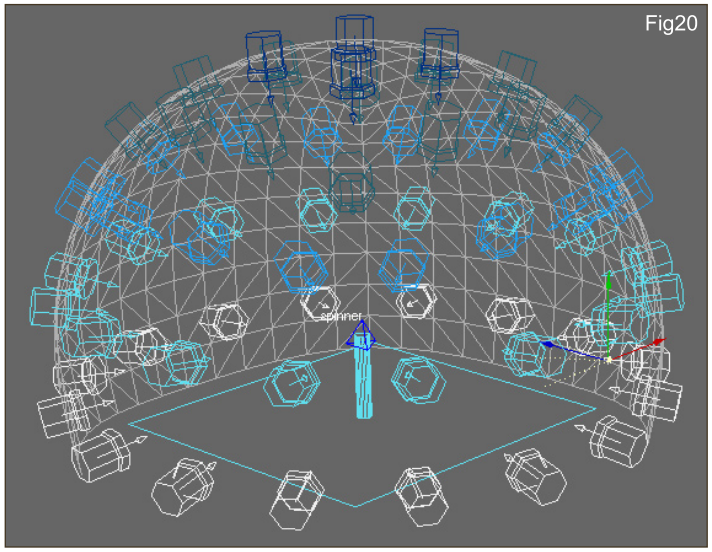


Fig20

## Prop Testing

It's now time to test our lighting rig. It's not finished, neither it is spinning. However, it is always good to test things as they develop. This way nothing will be left out in the process. To test the lighting rig we first need an object to cast shadows. I personally recommend using simple geometry to make render tests: it will take little time to render and it will be simple and fast to analyse any possible rendering artifacts. The following example use the all-mighty pillar and plane setup - simple and effective (Fig19 - 20).

## OPENING THE SCENE EDITOR

Whilst the previous settings for the sphere made it invisible to the render, it is still a problem if we want to select something inside our lighting rig; lights, dome, plane, pillar, null, and so on. Elements start to get on top of the other. It is easy to select something you did not want to and therefore make undesired changes. The Scene Editor will help us work with items in a more orderly fashion. It speeds up the process of altering items' properties and their interactions inside Layout. You can open it by pressing on its drop-down menu on the left part of Layout (Fig23). There are two versions of the Scene Editor: the New and the Classic. Press Open to select the newest version. The Scene Editor window will appear (Fig22 - 23).

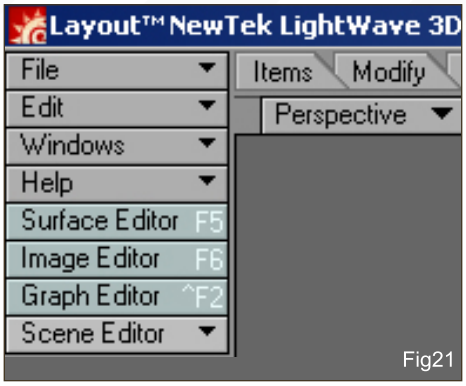


Fig21

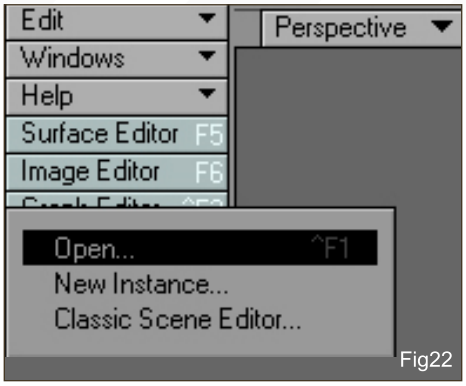


Fig22

## USING THE SCENE EDITOR

The Scene Editor has 3 main tabs: Items, Surfaces and Channels. The Items tab has a name list on the left for the items inside the scene. Items with an arrow contain a hierarchy underneath them, also referred to as "children". You can see the consecutive hierarchy of children by selecting the "parent" item and pressing its arrow (Fig24). Each Item has four main columns on the left. The left most has an A on top; all items with a tick in this column will be included for rendering. If you don't want to render something, you can un-check the item in this column (Fig25). **Production Tip**: Sometimes movie/TV scenes contain hundreds of objects. These scenes are called "Master Scenes", which include all final objects, hypervoxels, animations, lights, and so on. These scenes are normally used for more than one camera sequence (aka "shot"). While the master



Fig24



Fig25

scene contains all the items of the "virtual world", each shot will only show some of them at a time. Therefore, it is a waist of resources to include all the items for rendering. In these cases, it is better to un-check all the items that are not affecting the current camera shot, and save this as a different Layout file. If by some reason the shot is changed by the director, you can always include those items with some simple clicks. The column

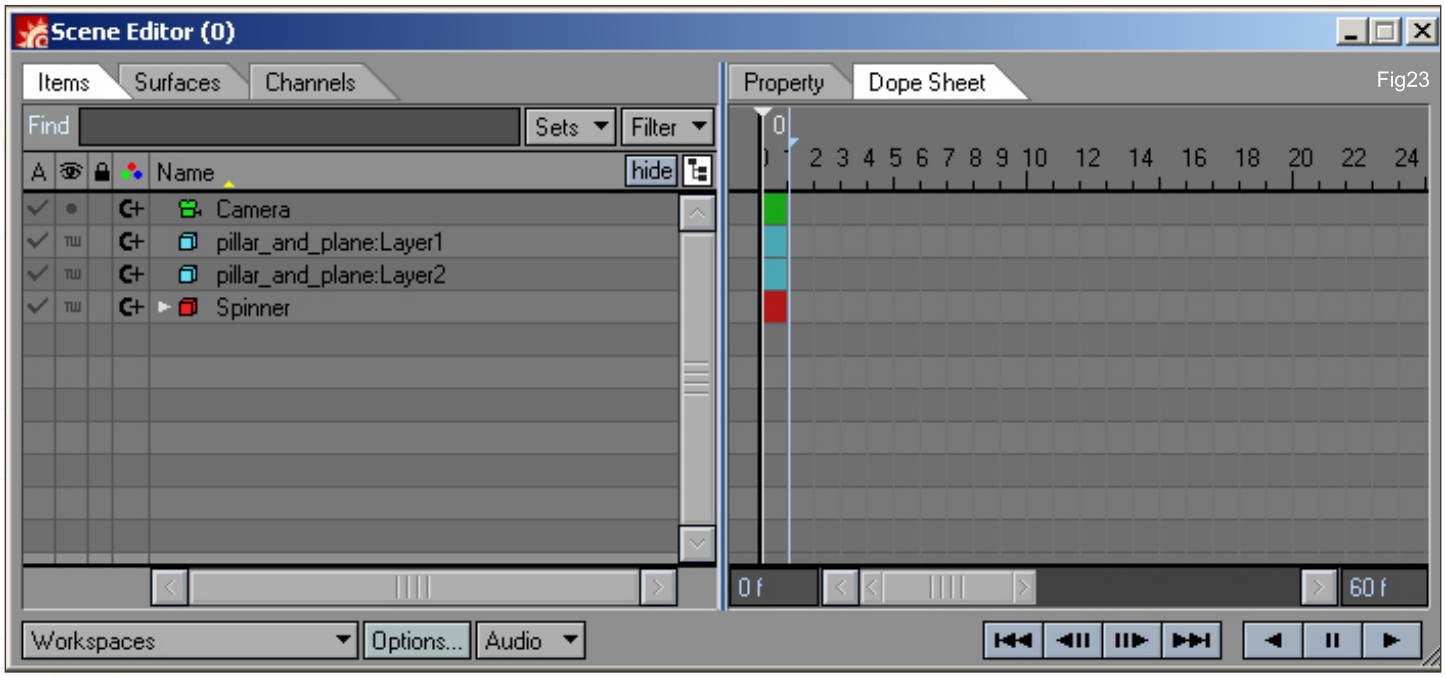


Fig23

with an eye specifies how items are seen inside Layout; Bounding Box, Front Face WireFrame, Hidden, and so on. This is helpful when we are building up a scene and we don't want to see certain items whilst working (Fig26). **Production Tip:** While the A button allows us to avoid the rendering of items, you may want to render them but not see them whilst working in Layout. This is particularly important when the amount of items is preventing you from working faster. Next to the eye icon is a lock. Locking items helps us to avoid unnecessary changes. Next to it we have an icon showing three dots: red, green and blue. Under it, each item will show a C+. Clicking on it will show the Position, Rotation and Scale of the item selected.

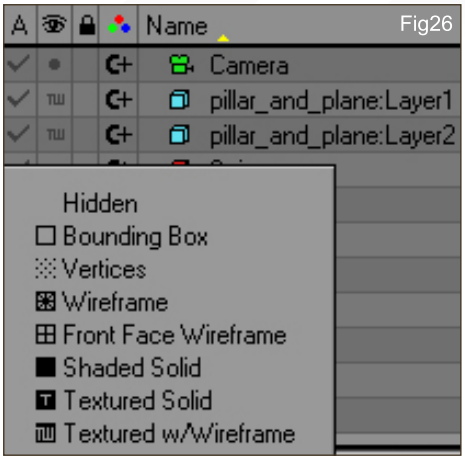


Fig26

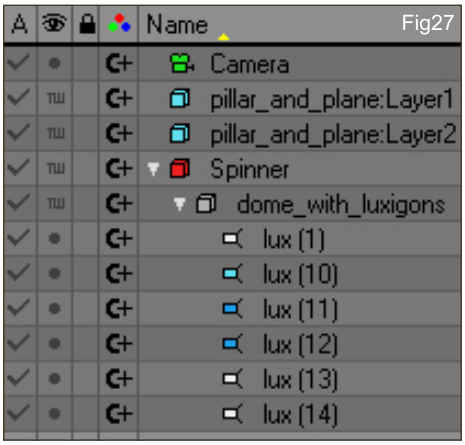


Fig27

## Rearranging Hierarchies

Some hierarchy adjustments must be done before we start spinning lights inside the scene. So far, the lights are parented to the dome. Lights must be parented to the Spinner, at the same "level" as our dome, not underneath it. Selecting lights individually to change their parent is an unnecessary and time consuming process. It is possible to do the same task with just a few clicks inside the Scene Editor. Open it and expand the hierarchy under Spinner Null object. The dome object will appear under it. Press on the second arrow, also. All 64 lights will appear under it (Fig27). Select the first light: lux (1). Drag the slider on the right all the way down. Press Shift and click on the last light of the list. This will select all the lights in between. Use the slider to go up again. Left-click over the selection set without releasing the mouse. Drag the selection just below the Spinner row. This will parent our lights to the Spinner and not to the dome object (Fig28 - 30). With the light selection still active, press P. This will open up the properties menu for all of the selected lights. Change the Intensity to 3%. Select the dome and un-check it. This will disable it for rendering. Set

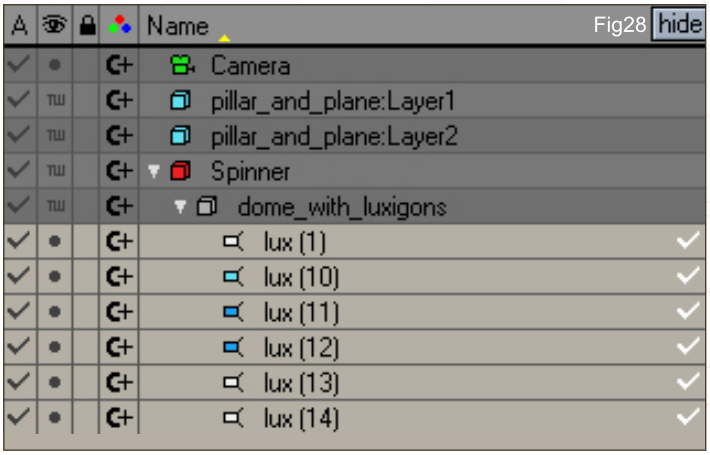


Fig28

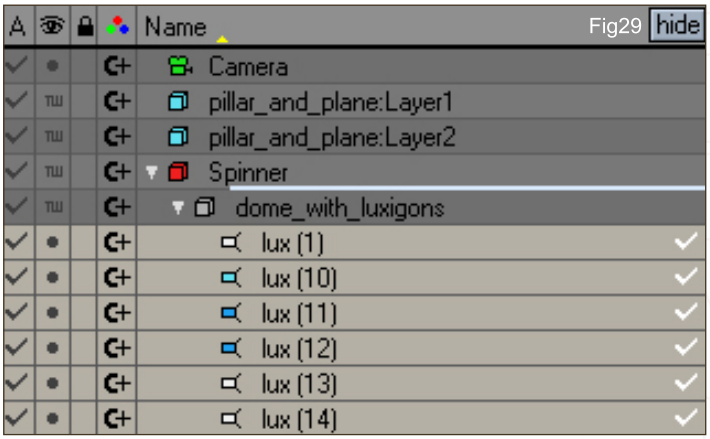


Fig29

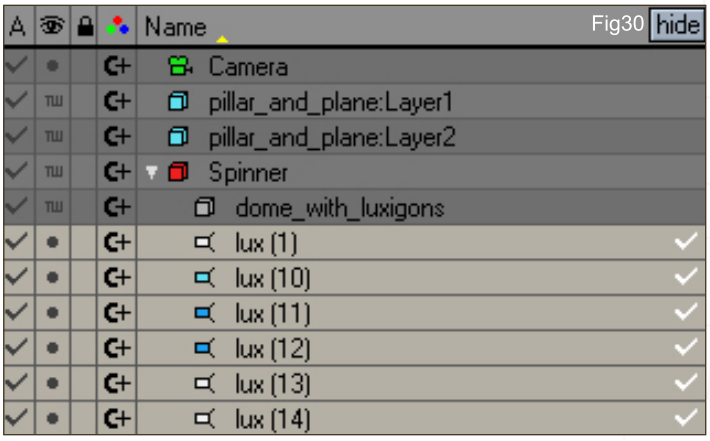


Fig30

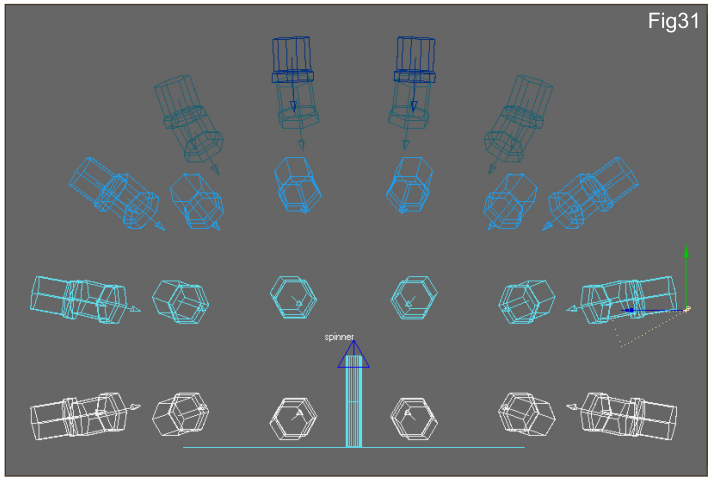


Fig31

its view to Hidden. You should now be able to view the plane and the lights, but not the dome. Select the default camera and point it towards the plane and pillar. Press Render - F9 - to see what we have so far. (Fig31 - 32).

## SHADOWS

The render will not show any shadows, since we have not activated them, yet. Remember what I said about testing lighting rigs with basic objects? Trying this lighting rig with a more complex object could possibly prevent you from observing basic errors and missing properties for the rendering. Go to the Render tab and press the Render Globals button. Activate the Ray Trace Shadows option. Since we are not using any refractive or reflective surfaces, set the Ray Recursion Limit to 4. Press F9 again to render (Fig33 - 34). The render will show the pillar casting 64 shadows. Whilst these shadows are mild in contrast, they are completely sharp. Start to spin them so that we can achieve softer shadows.

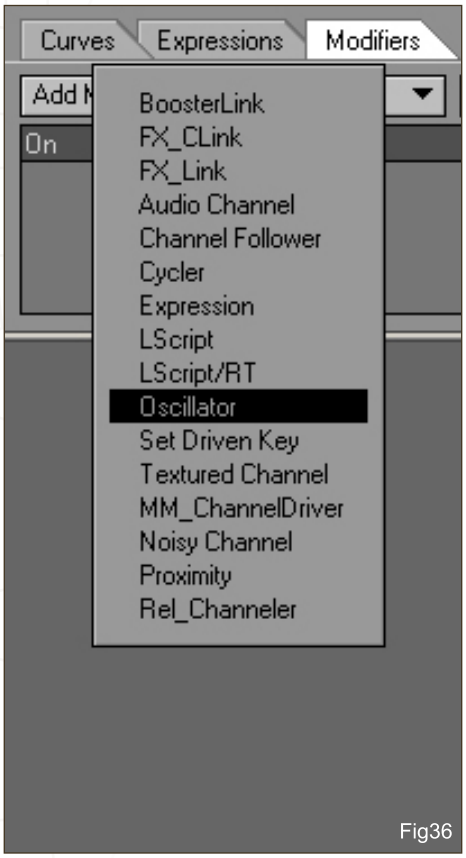
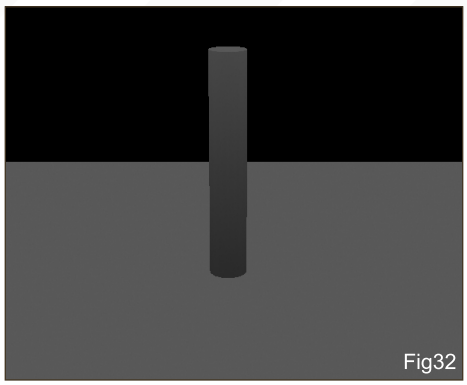
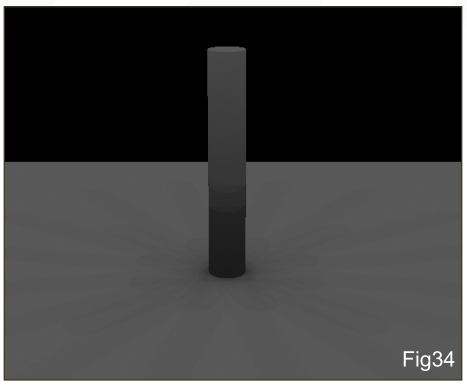


Fig36


Fig32


Fig34

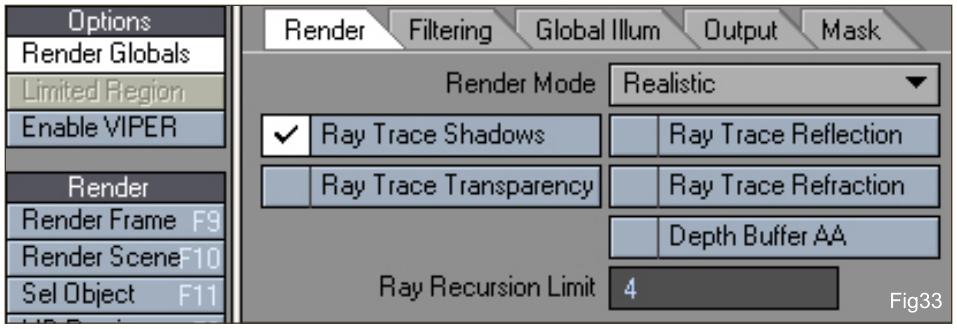


Fig33

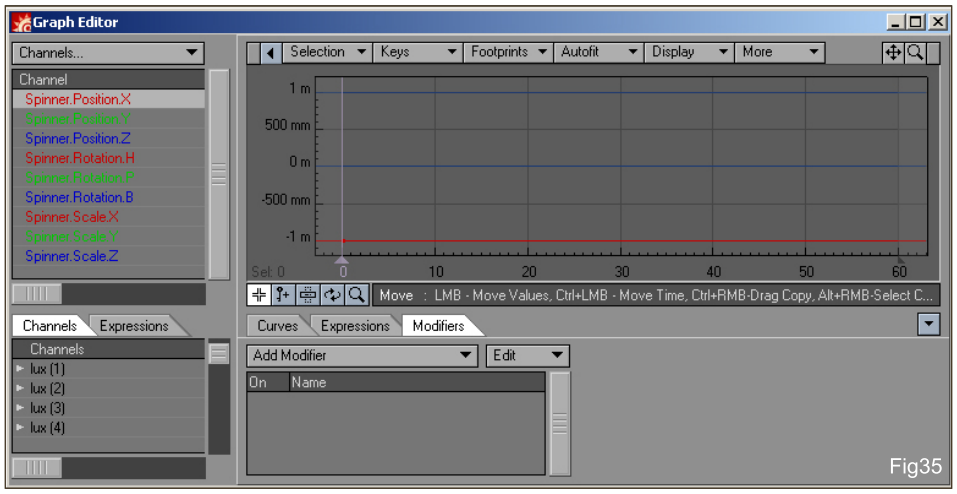


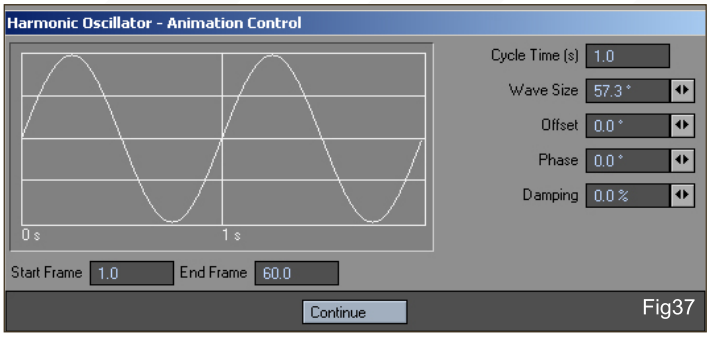
Fig35

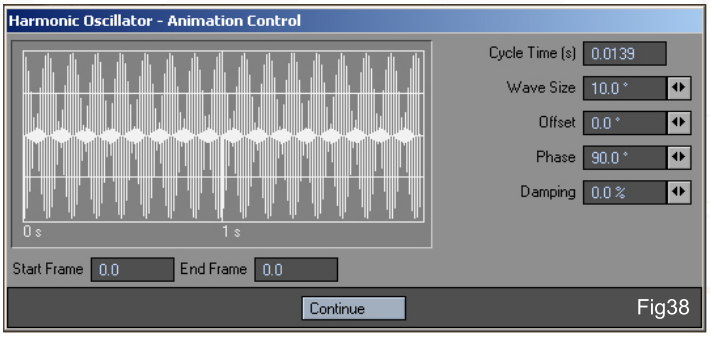
## SPINNING LIGHTS: THE GRAPH EDITOR

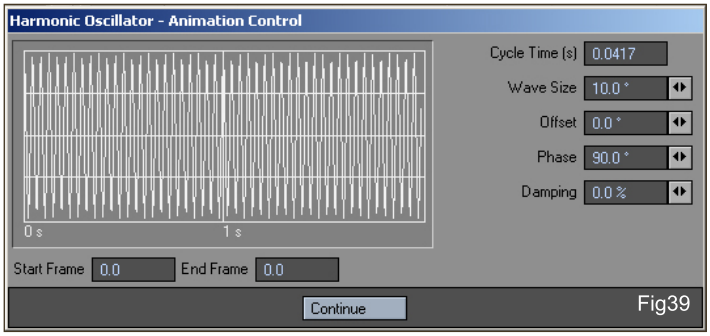
The Graph Editor is located on the left menu in Layout. Before opening it, always select the item you want to animate. The Graph Editor allows animation beyond hand-keyframing. Be aware that it will only show the animation channels of the currently selected item. Therefore, select the Spinner Null object first, then press on the Graph Editor button (Fig35).

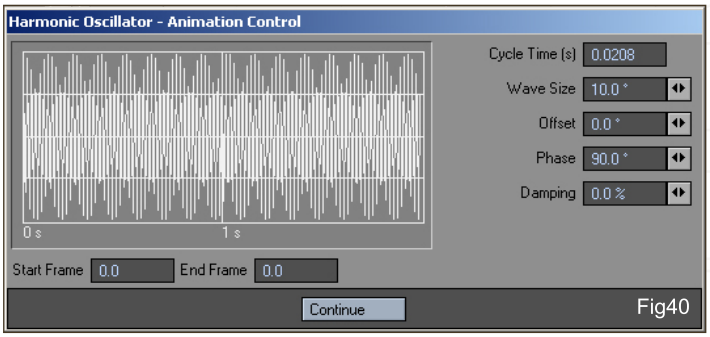
## THE OSCILLATOR

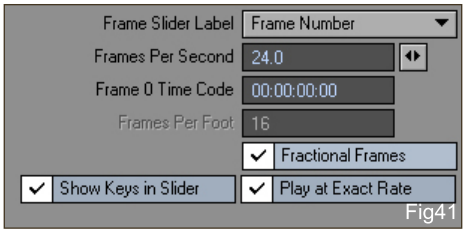
In the previous chapter, a Null was animated over the lapse of one single keyframe. For the Spinning Light Trick to work for animation, this same movement has to be repeated for all of the frames of our sequence. This movement can be done in many ways. However, there is a tool that specialises in soft and repeating cycles: the Oscillator. By using an Oscillator for each of the heading, pitch and bank of our Spinner Null object, we can attain our spinning goal. Select the Spinner.Rotation.H channel. Activate the Modifiers tab on the left, then select the Add Modifier drop-down menu. Select the Oscillator option from it. Double-click on it to open up the properties menu (Fig36 - 37). One Oscillator should be added to each of the rotation channels of our Spinner. While



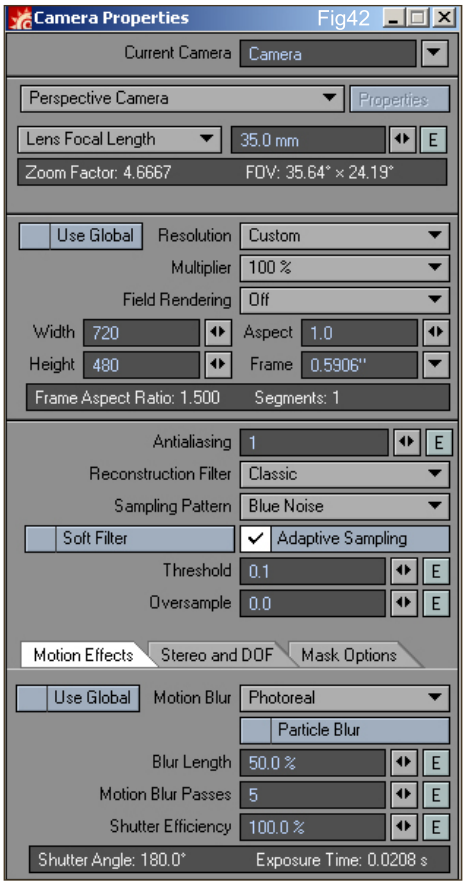




we can spin a Spot light to extreme degrees to achieve the desired effect, using the least amount of degrees to cover all of the area allows us to reduce render times! However, a small angle could produce hard edged shadows. Balance is the key! Finding this balance is not easy though, and it is more of a matter of trial and error. Therefore, I present you here with a combination that I personally find useful: Spinner.Rotation.H (Fig38); Spinner.Rotation.P (Fig39); Spinner.Rotation.B (Fig40).

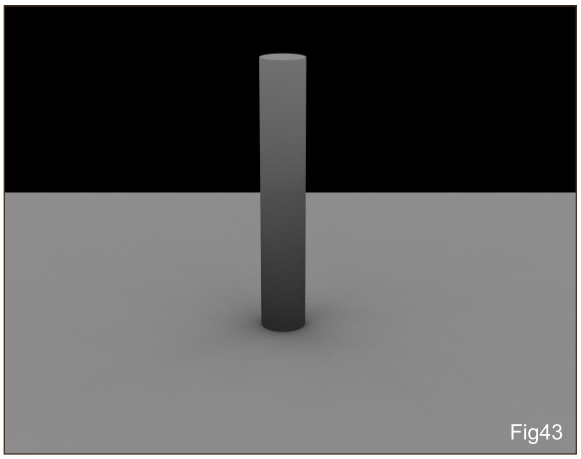
## Fractional Frames

Press D to open up the Preference pop-up window. Go to the General Tab and activate the Fractional Frames option. This will allow Motion Blur to work in between frames. We need it to work in between frames since our spinning cycle happens in between frames for the animation to be identical at each frame (Fig41).




## Camera Settings

Whilst any of the cameras inside LightWave can help us achieve the Spinning Lighting Trick, some of them will work better with Motion Blur and allow lower render times. Select the Perspective Camera. Activate the Adaptive Sampling option. Set the Threshold to 0.1 and the Motion Blur type to Photoreal. Set the Motion Blur Passes to 5. Select all your lights and set their intensity to 5%. Press F9 to render (Fig42 - 43).

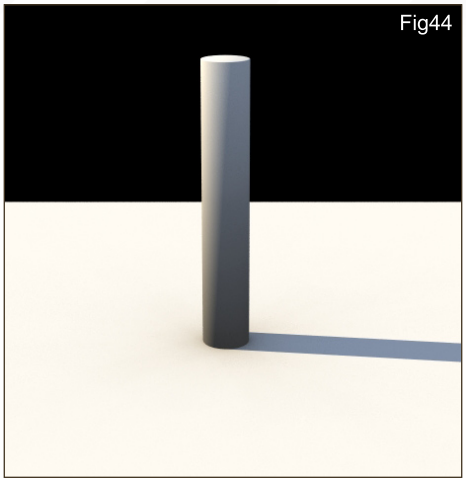


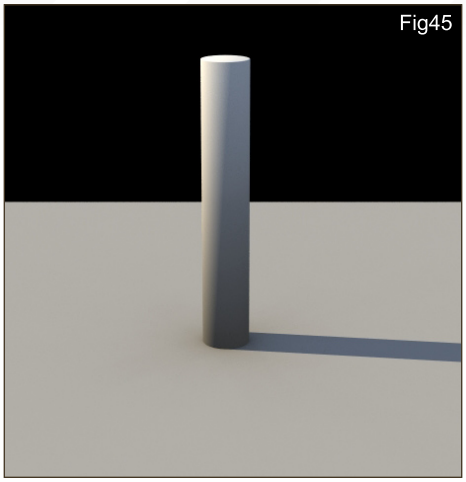

## Colour & Intensity Settings

Let's set a blue atmospheric tone to our spinning lights. Select all of them via the Scene Editor. Press the P key to open up the Light Properties Menu. Set the RGB of the spinning lights to 160, 189, 235. Set the Ambient Lighting Intensity to 35%, with an RGB of 147, 124, 086.

## SUN

Now add a new Distant light. This one will simulate the sun inside our scene. Set its colour to 147, 124, 086, with an Intensity of 250%. Set its Heading to 98 and Pitch to 42. Select the Spinner object and position it 1.5 m on the Y axis. Press F9 to render. You will notice that the resulting render shows a burnt floor, while the pillar is not lit enough (Fig44). By changing the plane's diffuse value to 70%, we can fix this variation. Other solutions may include the variation of light intensities of our lights, using a target item, and so on. Feel free to play! This is however, the fastest and easiest solution (Fig45).


Fig44


Fig45

## RENDERING COMPLEX OBJECTS.

The true power of the Spinning Light Trick is more apparent when we start rendering more complex objects. Whilst the setup of this lighting rig has been complex, it can be used as many times as you want for other objects. The following setup uses the same lighting rig. I just changed the spinning light RGB colour to 076, 104, 150 and the intensity to 7%. This BMW is made of 769,196 polygons. Most of them are subpatched. However, it was rendered in 3 minutes: an affordable time for animation (Fig46). The following image took 13 minutes to render. It is composed of 3,274,064 polygons. As you may realise, this technique could be very beneficial to render those objects composed of millions of polygons. Whilst radiosity is becoming a more and more affordable option nowadays, the spinning light trick proves itself indispensable in high polygon count scenes (Fig47).

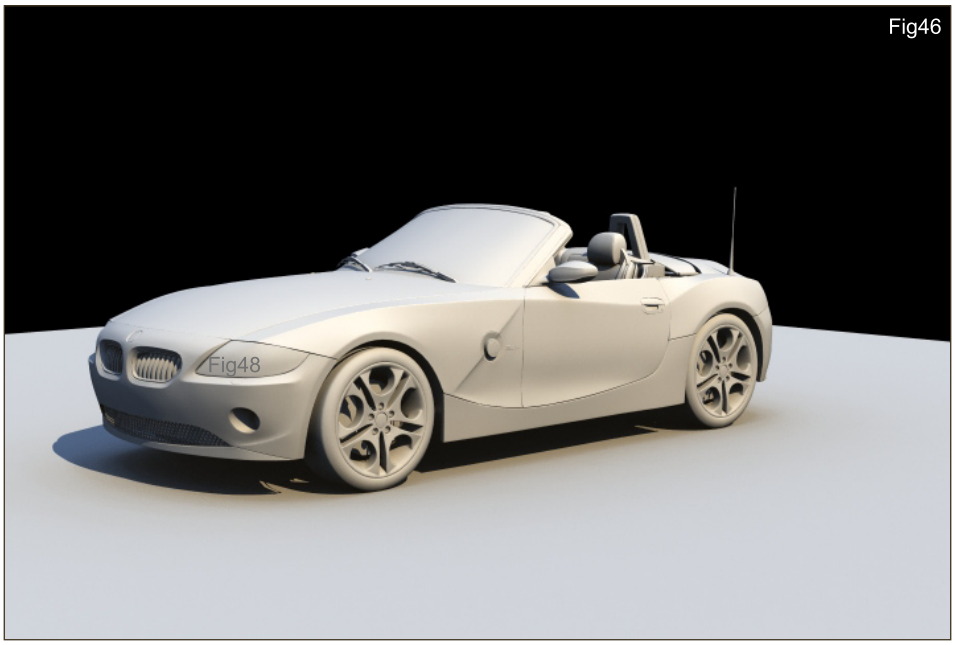
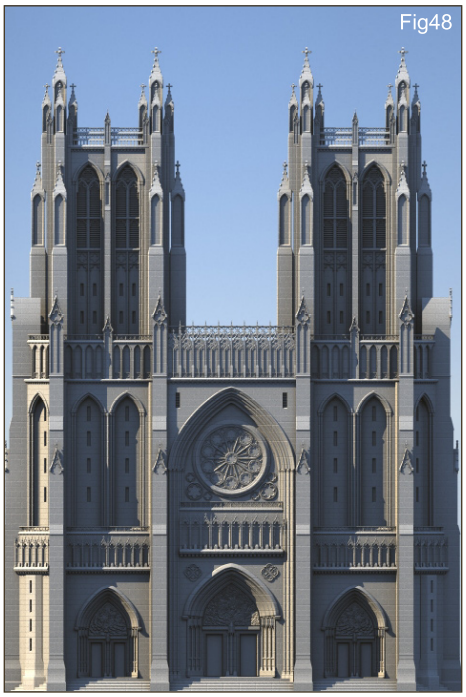

Fig46


Fig47


Fig48

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# JOAN OF ARC

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**Introduction:**

Michel Roger's famous 'Joan of Arc' tutorial re-written for Maya by Taylor Kingston, Cinema 4D by Giuseppe Guglielmucci & Nikki Bartucci, Lightwave by Vojislav Milanovich and Softimage by Luciano Iurino and 3DCreative Magazine.com.

If there has been one single tutorial that has educated and inspired more budding 3d artists than anything else, this complete step by step project by Michel's must be it. The community is in debt to him.

These 120 plus page, Downloadable PDF's are designed for ease of use to help beginners and intermediate level of artist alike in the creation of a female character. The tutorial takes you through the process of modelling, texturing and mapping to finally adding bones.


Chapter 1: Modeling of the Body
- Body

Chapter 2: Modeling of the Head
- Head, Ear & Assembly

Chapter 3: Modeling of the Accessories
- The Sword & Armour Legs

Chapter 4: Modeling of the Accessories
- Armour Bust, Hair & Glove

Chapter 5: Modeling of the Accessories
- Accessories & UVW Mapping

Chapter 6: UVW Mapping
- Sword, Clothing, Armour & Body

Chapter 7: Texturing & Hair
- Eyes, Skin & Hair

Chapter 8: Bones & Skinning
- Bases, Hierarchy & Skinning



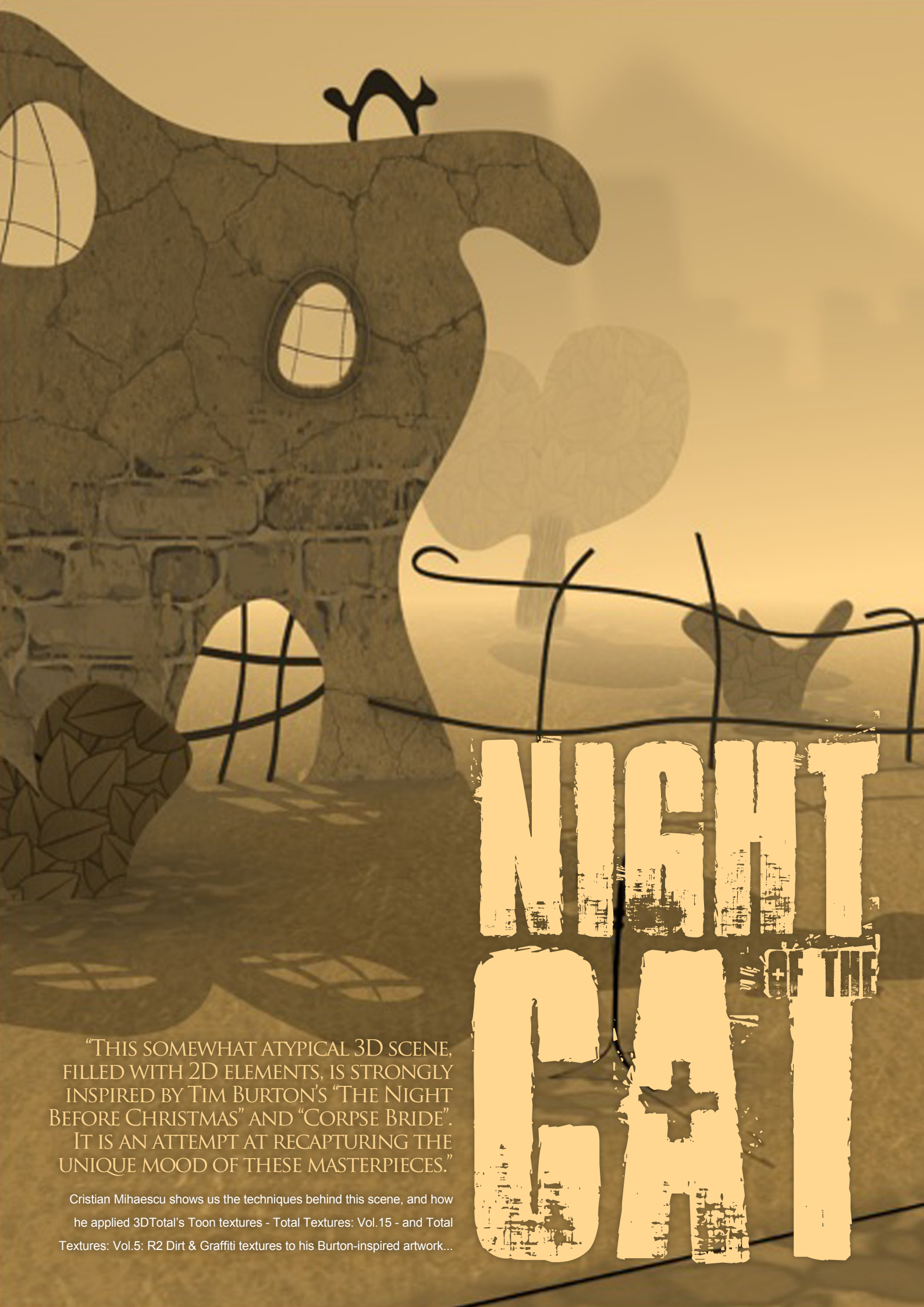




Image by Michel Roger


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# NIGHT OF THE CAT

"This somewhat atypical 3D scene, filled with 2D elements, is strongly inspired by Tim Burton's "The Night Before Christmas" and "Corpse Bride". It is an attempt at recapturing the unique mood of these masterpieces."

Cristian Mihaescu shows us the techniques behind this scene, and how he applied 3DTotal's Toon textures - Total Textures: Vol.15 - and Total Textures: Vol.5: R2 Dirt & Graffiti textures to his Burton-inspired artwork...

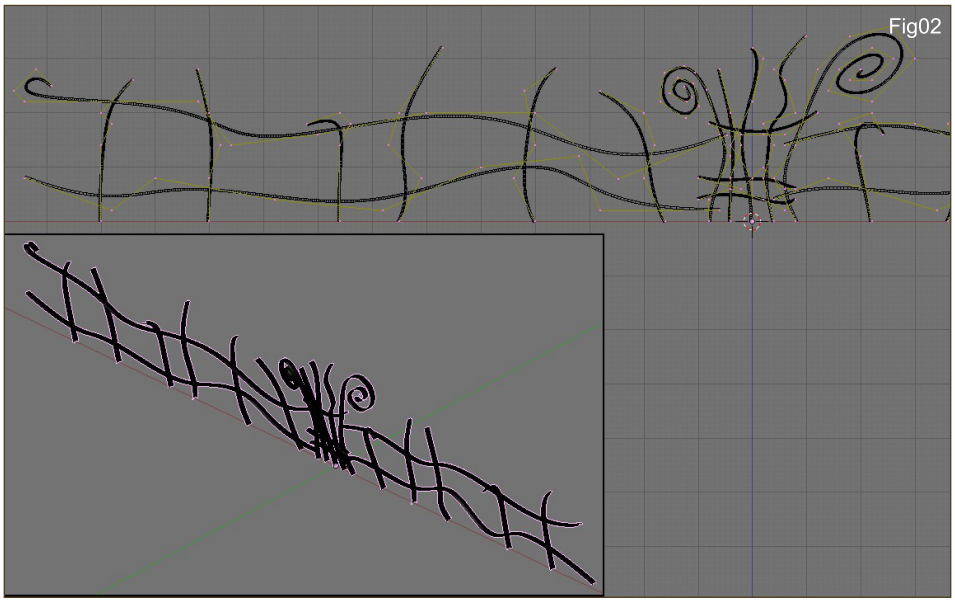
# NIGHT OF THE CAT




## CREATED IN:

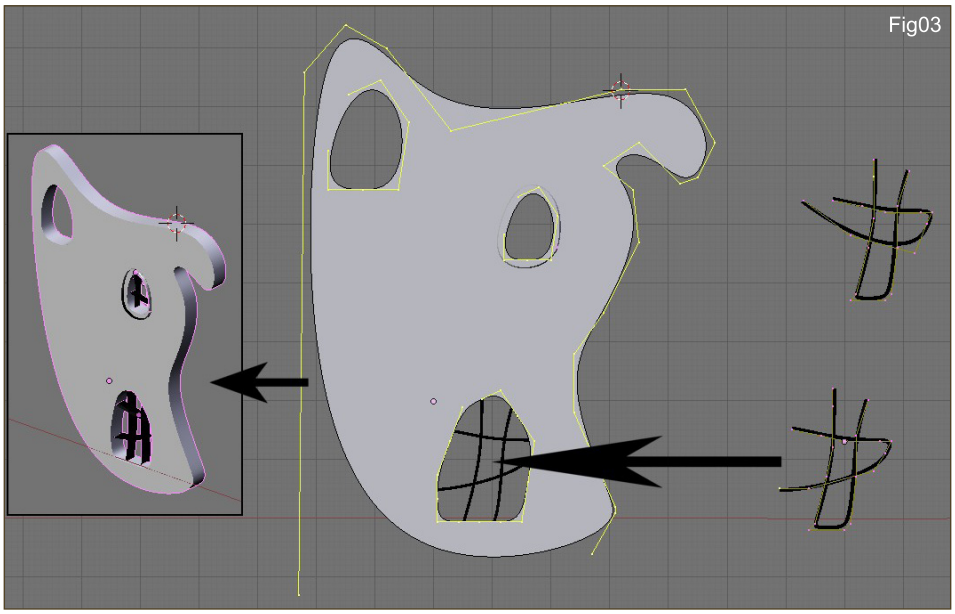
Blender, Gimp, Inkscape.

Many thanks to the 3DTotal team, www.3dtotal.com - the big sister company of Zoo Publishing - for this opportunity; it is a pleasure for me to share some of the techniques that I used to create my “Night of the Cat” image (which is also featured in the Galleries in this issue of 3DCreative Magazine). My name is Cristian Mihaescu, and I am an electronic music composer who also loves to create digital art - mostly 3D scenes - as a hobby. Blender, Vue Infinite, Poser, Inkscape and Gimp are my main tools. For Night of the Cat I used Blender (a powerful Open Source 3D programme), Gimp (a 2D Open Source program), and Inkscape for vector graphics (also Open Source). The techniques that I’ll explain are not specific to these applications though, and can be adapted to equivalent programs such as Maya and Photoshop.




## THE CONCEPT

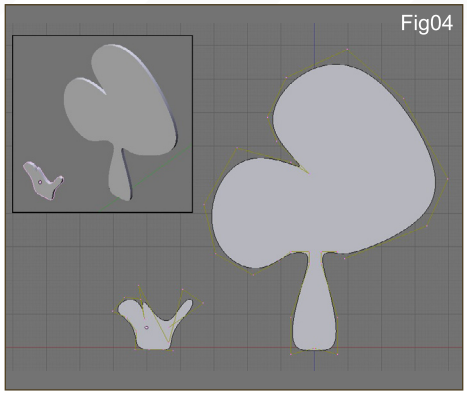
This somewhat atypical 3D scene, filled with 2D elements, is strongly inspired by Tim Burton’s “The Night Before Christmas” and “Corpse Bride”. It is an attempt at recapturing the unique mood of these masterpieces. From the modelling, right through the texturing, and up to the title, I used a minimalist style combining

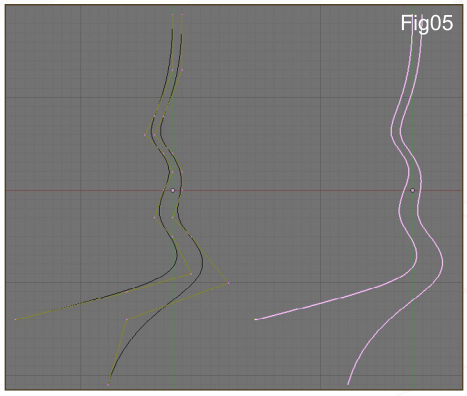


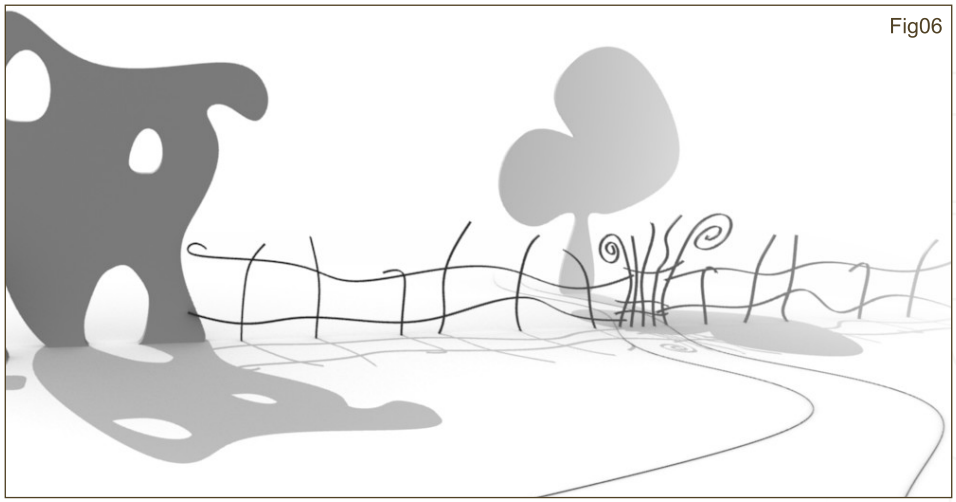
2D and 3D shapes, with lights and shadows to recreate some of the mystery of a children's story.

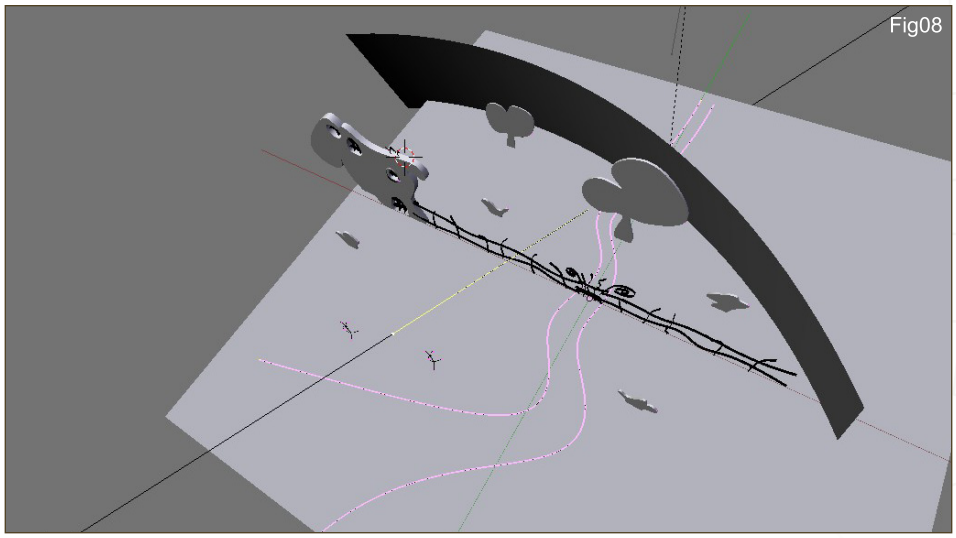
## Modelling

NURBS curves which are only slightly extruded, appear like something between 2D and 3D (Fig02). I began with the fence which, like a "Chef d'Orchestre", determines the style of the image and its organisation around the centre of attraction. Modelling the fence was easy; I started with a simple NURBS Curve, subdivided it, moved the vertices in "crazy places", subdivided again, moved the new vertices, and so on. The final fence contains lots of curves - extruded and bevelled a little (Fig03). For the filled elements, like the house, trees and plants, I used NURBS Circles; I subdivided them and moved the vertices in the same plane. The holes to represent the windows are an effect of new NURBS Circles inside the main one, and the metal gate was created using simple NURBS Curves, in the same manner as the fence. Then all was extruded with different values for thickness (Fig04). I used the same method for the cat, and the same was used for the road, also. No complications can be very cool! It is also possible to draw all of these curves in Inkscape or Illustrator and import them into your favourite 3D application to extrude them (Fig05).


Fig04


Fig05

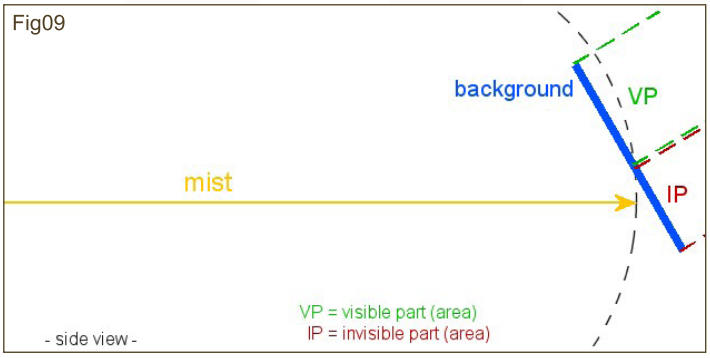

Fig06

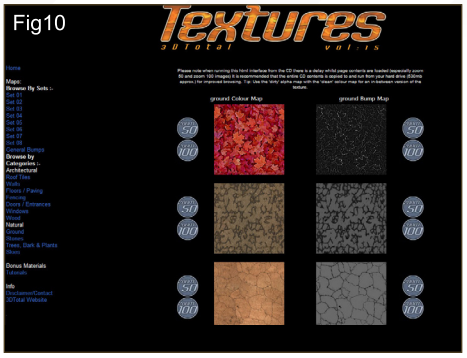

Fig08

## Lighting

For this scene, the lighting system had to follow the same minimalist style. Therefore, I used only two lights and Ambient Occlusion. Ambient Occlusion illuminates an object from all sides, which flattens the perspective and adds softness, which was great for my purpose. The two lights were two Sun lamps in the same position and same direction; one for lighting and one to control the darkness of the shadows. The second Sun had to use Ray-tracing and was set to 'Only Shadow'. After the addition of a little mist to hide the horizon, I made a first preview render (Fig06). Looking at the result I decided to complete the scene by adding another house (which can barely be seen), hidden in the shadowy part of the scene, plus some trees, plants and more crazy stuff!

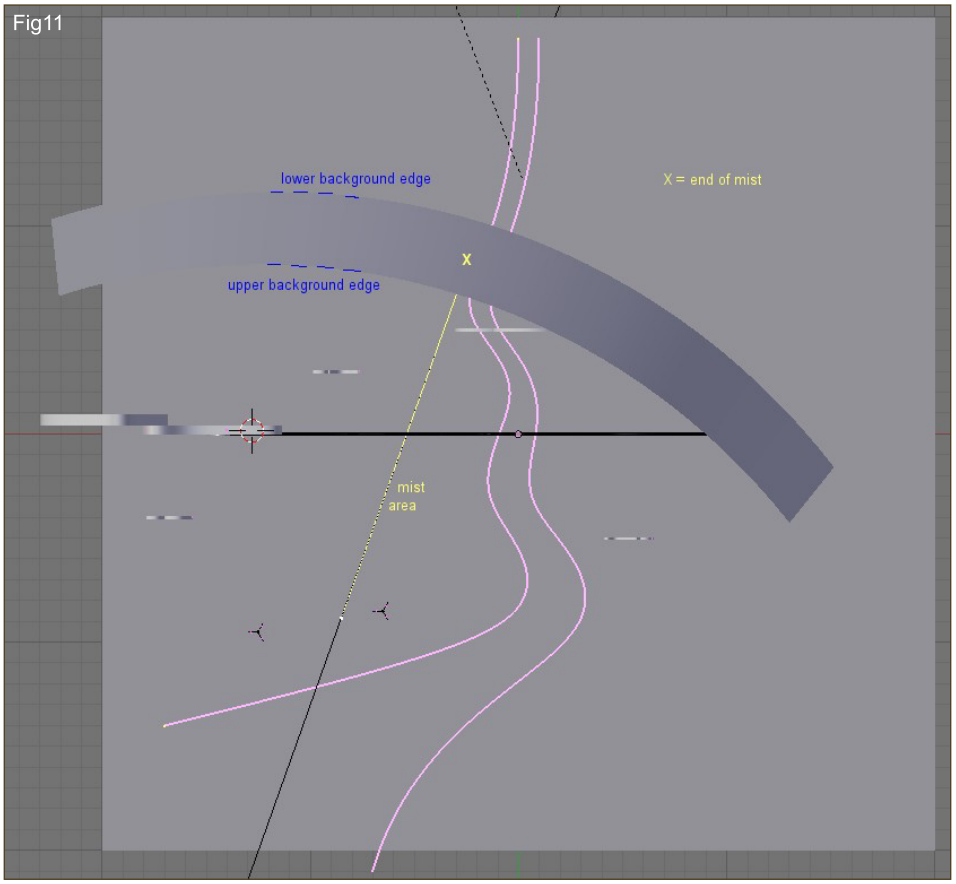

Fig07

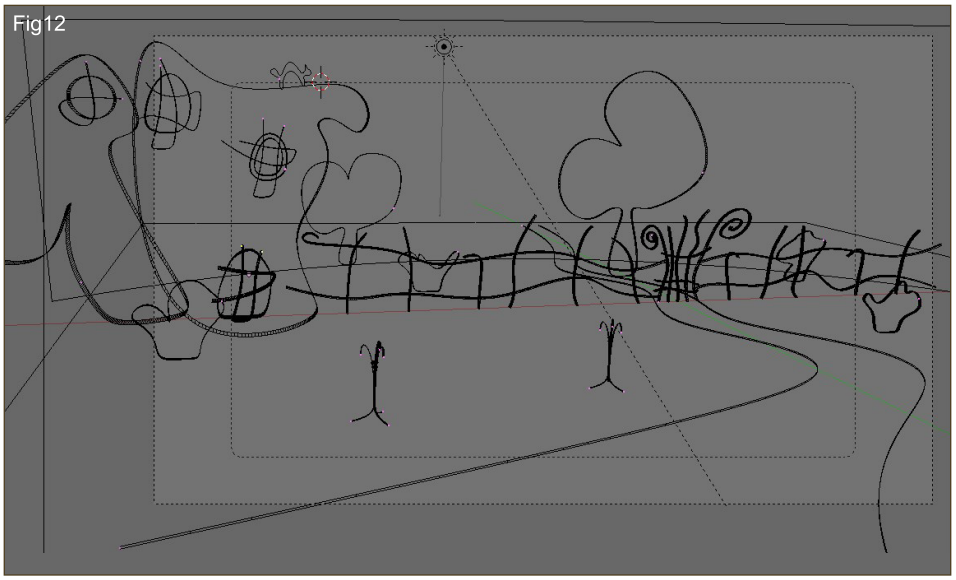


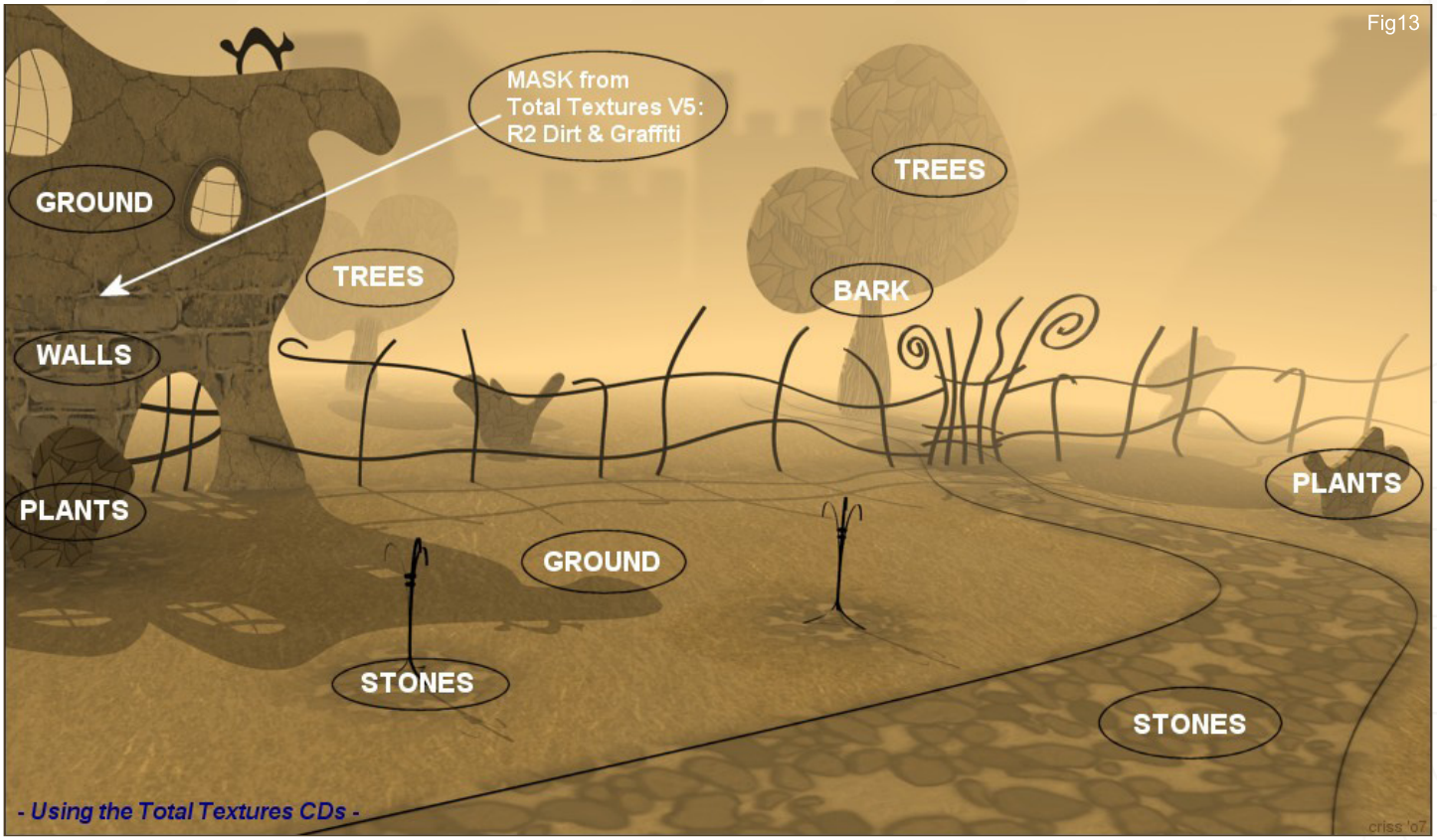




## BACKGROUND & COMPOSITION

I decided to draw a 2D background to accentuate a mysterious mood, much alike that of children's stories. I drew the lines in Inkscape and the rest was done in Gimp (Fig07). I opted for a cool looking castle and a rock with a distant mountain in the background. This added two more layers with an emphasis on a feeling of great distance between the castle/rock and the mountain in the distance. I used different amounts of blur on the two layers, which gave a nice depth of field, and two different levels of grey. By then, the single remaining problem was to hide the horizon line whilst keeping the upper part of the background visible and above the mist. Since the mist in Blender is view dependent, I had to map my background to a curved surface so as to control how much of it showed through. Fig08 is a screenshot of the scene, from above. In this screenshot, the yellow part of the line of view for the Camera represents the beginning of the mist up to the end where it hides everything. To completely hide the lower part of the background in the mist, whilst leaving its upper part gradually more visible, I inclined the curved surface towards the camera and set the mist to reach maximum intensity in front of the background's lower part (see Fig09). Looking from the side view, one can see how the inclined background interacts with the misty area (Fig10). At that point, before texturing, the scene had this aspect when viewed in wireframe (Fig11).

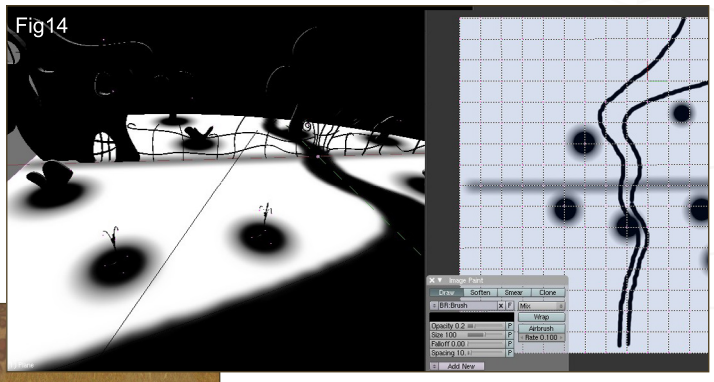


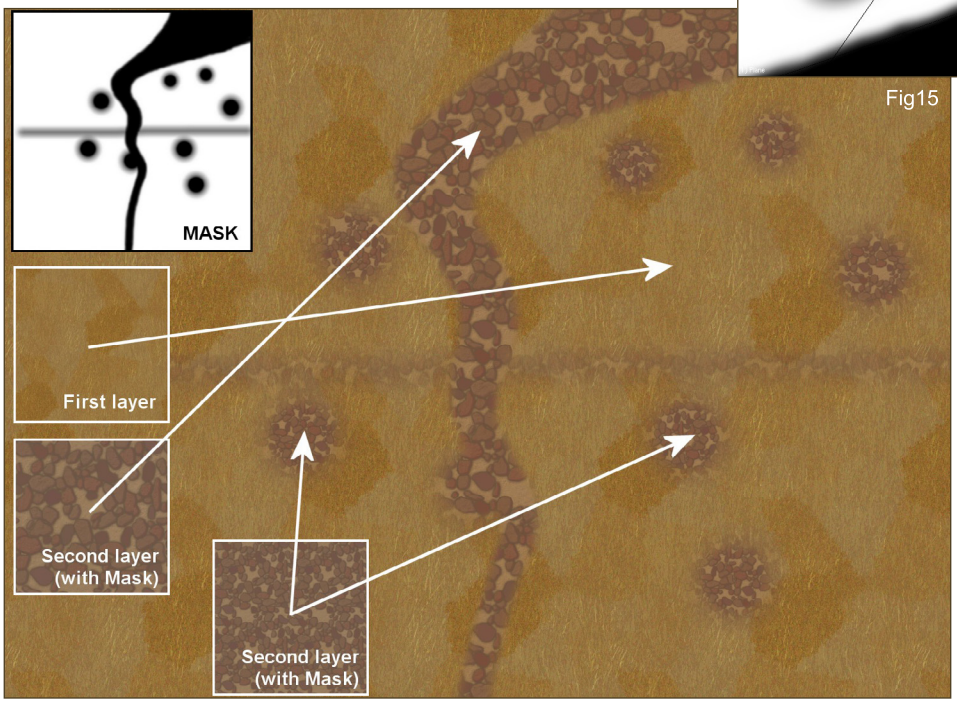



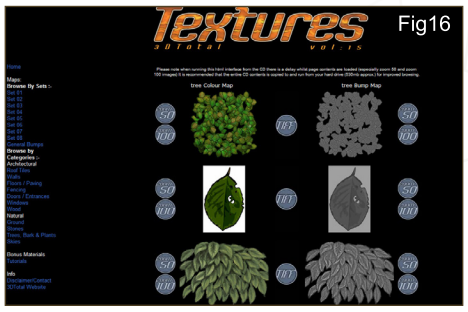



## Texturing

The original "Night of the Cat" received stylised textures that I drew in Gimp. The 3DTotal team gave me the opportunity to re-work the scene using some of their wonderful texture collections (**www.3dtotal.com/textures**). I will describe this process, next. I opted for some toon textures from the Total Textures: Vol. 15: Toon Textures CD, and used some masks from the Total Textures: Vol. 5: R2: Dirt & Graffiti DVD. I started by



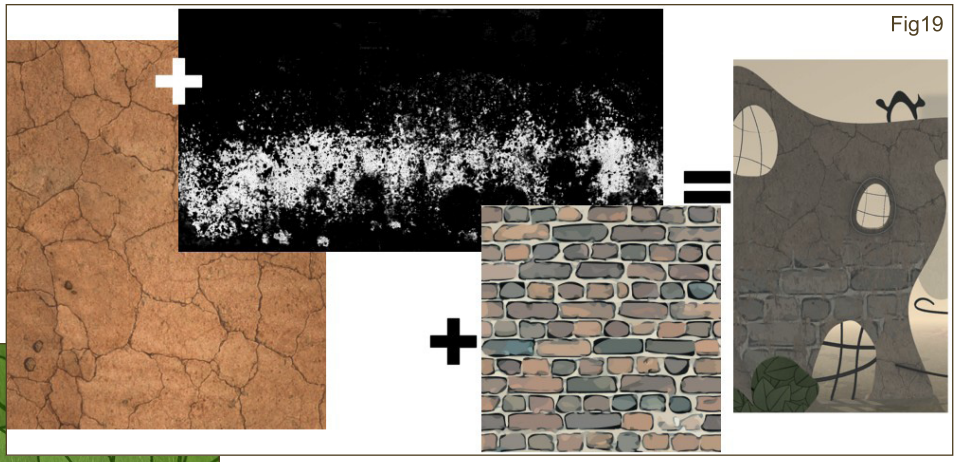




UV-mapping the ground plane. Then, following the contour of the road's curve, I painted directly onto the mesh plane in the UVMap Editor, and in black to obtain a black and white mask image. This image will be used to texture with different Toon Textures (Fig12 - 13). You can see the re-textured ground in Fig14. The UVMap texture


Fig17

for the ground was done in Gimp, using two layers; the first layer containing the main ground texture and the second layer containing the rest of the textures with a mask for the distribution. Balancing the texture for the ground with the main texture was done using the Curves Filters and playing a little with the Saturation and Lightness (Fig15).


Fig19

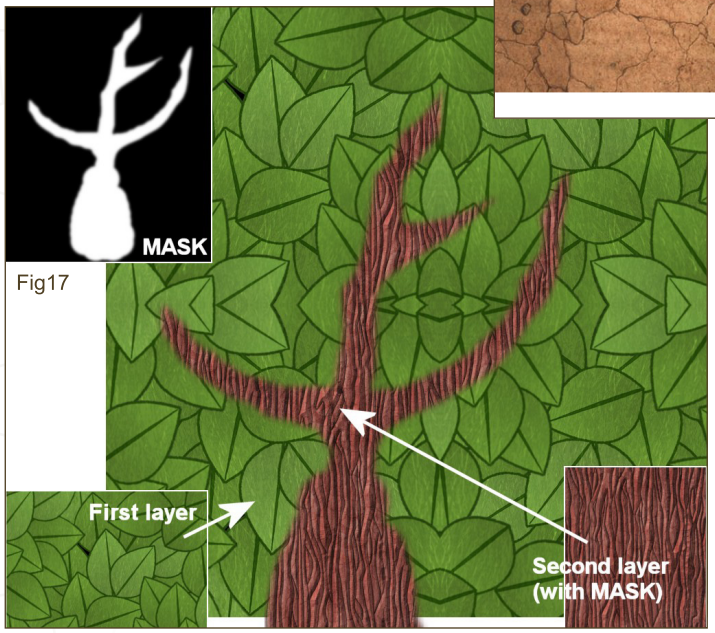


Fig17

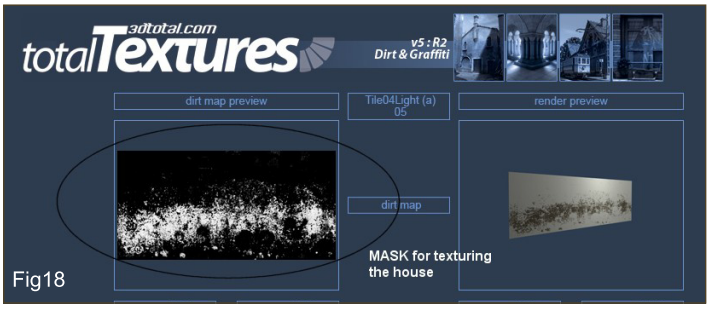


Fig18

## Re-textured Trees

The tree was UVMapped, too. I painted, in black and white, some cartoon branches to use as another mask. This resulted in a texture with a crazy toon style (Fig16 - 17).




## Re-texturing the House

The house was textured in Blender using a Stencil channel. On the first and third texture channel were loaded the textures for the wall (a toon wall and brick texture), whilst the second texture channel contained the Stencil image



(the mask). Dirt textures were used for the mask (Fig18 - 19).

## Final

By this point, the picture only needed a little post-production work in Gimp to complete it. Here is the final Blender render (Fig20). Post-production work consisted of some tonal corrections. My intention was to even out the tones between the foreground and background, and to improve the colour of the fog in the background (Fig21). Above is the final Night of the Cat image, re-textured using 3DTotal Textures CDs and DVDs.


## Cristian Mihaescu

For more from this artist contact:

cristian.mihaescu@gmail.com

# totalTextures

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### Sci-Fi

This enormously improved version of the original texture collection now contains 642 individual Materials, (576 on v7:r1) comprising of over 2573 individual, hand crafted texture maps. Every Texture now has its own unique colour map, bump map and in some cases specular, normal maps and alpha maps. There is too much bonus material to mention, but alpha maps come into play, planet surfaces and hi-res star fields can also be found not to mention the wealth of content in the tutorial sections.....

Here is the CD's full contents:-

* 14 Alien Sign
* 17 Control Panel
* 8 Logo
* 56 Number
* 20 SS 'set'
* 30 TPOD 'set'
* 44 UNS 'set'
* 49 Symbol
* 27 Ceiling
* 16 Container
* 26 Damage
* 8 Dirt Map
* 9 Dish
* 32 Door
* 31 Floor
* 27 Girder
* 11 Gun Flare
* 14 Handle
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# Cheese Platter

"Try to find ones [references] that you can purchase and have in front of you... This is because the pictures you grab online can have bad lighting, be pixilated, or may not contain enough detail...

My name is Hau Ming (Jamie) Li and this is my first tutorial, so I will try to explain how I created this Cheese Platter (Fig01) the very best that I can...

# Cheese Platter


Fig01

## Created In:

Autodesk Maya 8.5 & Adobe Photoshop

This piece is actually based on a photographic concept, which was partially derived from Fig02. Originally, I was asked to create this piece based on the original photographic reference image, but I feel that the point of shading and lighting is to show off your texturing skills and give it better lighting, if possible. As you can see, the lighting is too strong in the original image, so I added more information to my own scene, like the blue cheese, cubes of cheese, Brie, almonds and crackers, just to make it busier. I also wanted to make it more painterly and with a better composition.

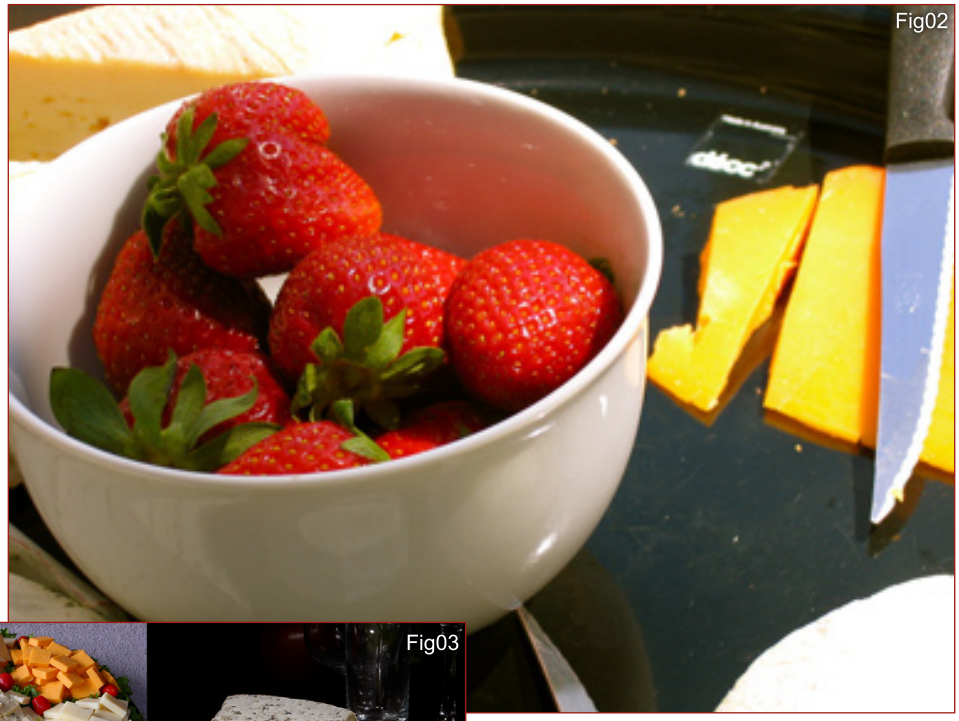

Fig02

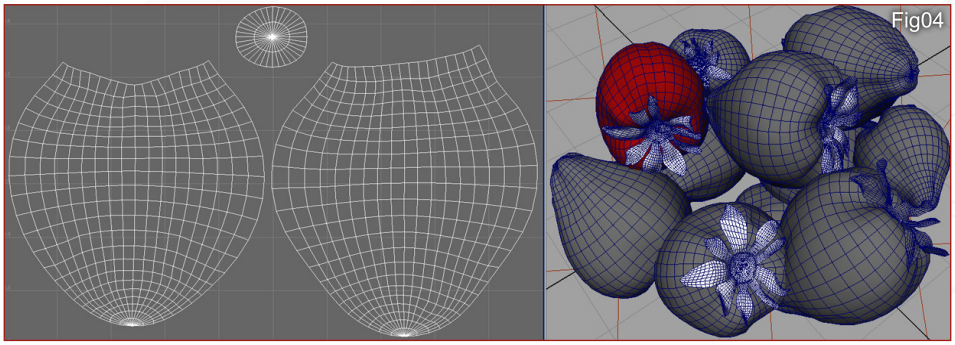

Fig03

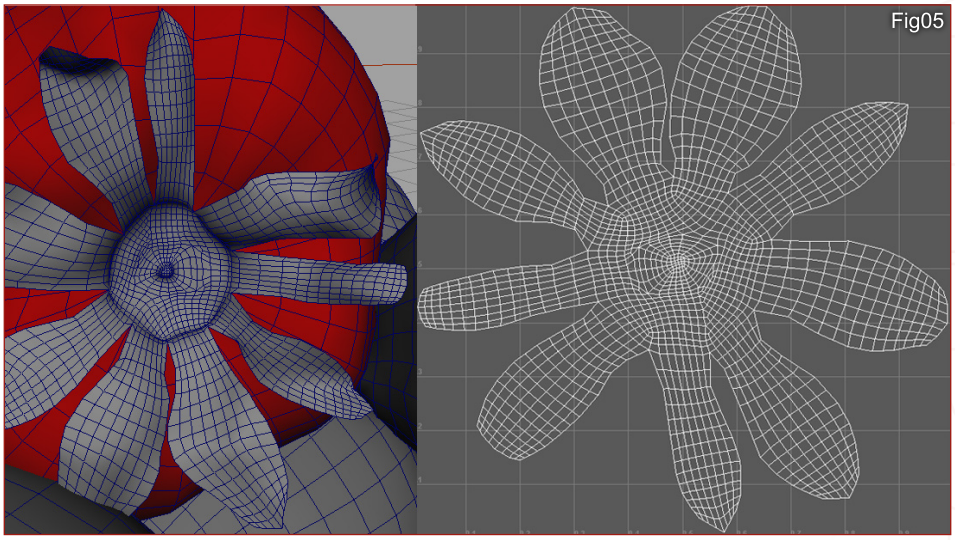
## References

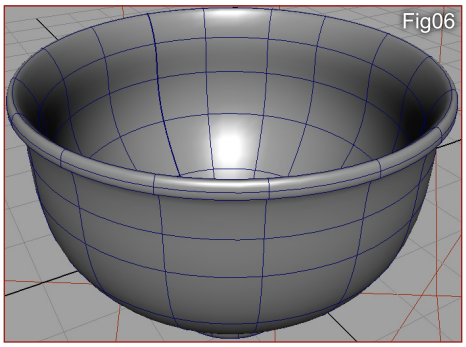
It is always good to have more than one reference to look at when modelling and texturing. Try to find ones that you can purchase and have in front of you when modelling and texturing. This is because the pictures you grab online can have bad lighting, be pixilated, or may not contain enough detail. Here are some of the references I used (Fig03).

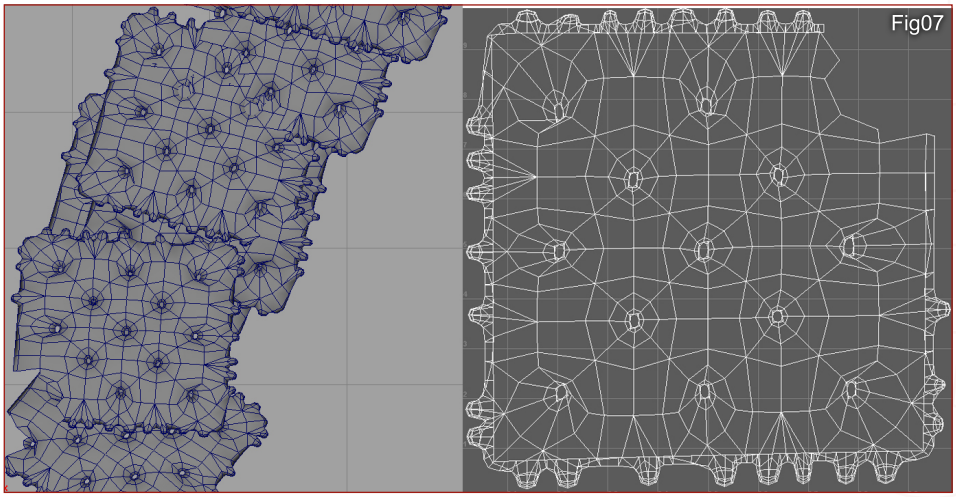
## Modelling

For the strawberries, I modelled one in NURBS and converted it to Polygons. I checked the normals and then reversed the normals (this is very important, but I will explain why later on). I then UV-mapped it (Fig04). For the strawberry leaves, I used Polygon planes and the Append tool. I shaped it with a Lattice, and then UV-mapped it (Fig05). For the bowl, I used a NURBS CV curve, revolved it, and then used the Rebuild command on the surface (Fig06). For the crackers, I modelled one in Polygon and extruded it. I modelled only one side, not two, because no-one will see the back of it (Fig07). For the cheese cubes, I basically modelled one good one in Polygon with rounded edges, and UV-mapped it. I then duplicated it and shaped them all individually with a Lattice, to make them look less uniform and less perfect. Then, when I placed them, I rotated each cube so that the camera could only see just one side of the textures. This saved a lot of time (Fig08).

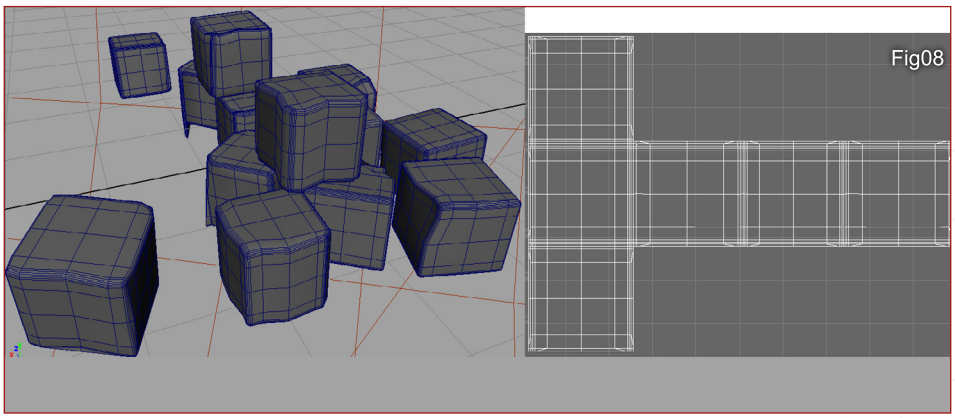

Fig04

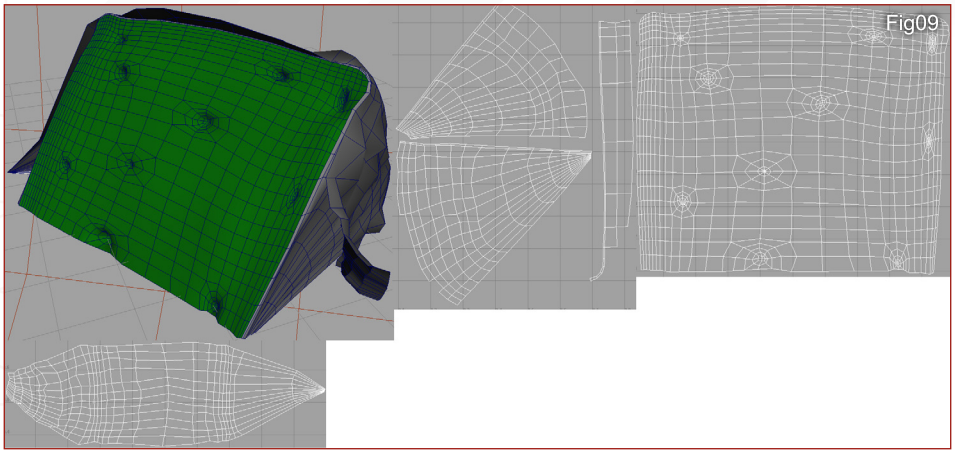

Fig05

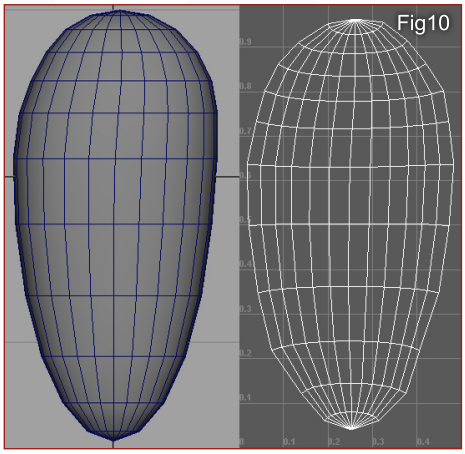

Fig06

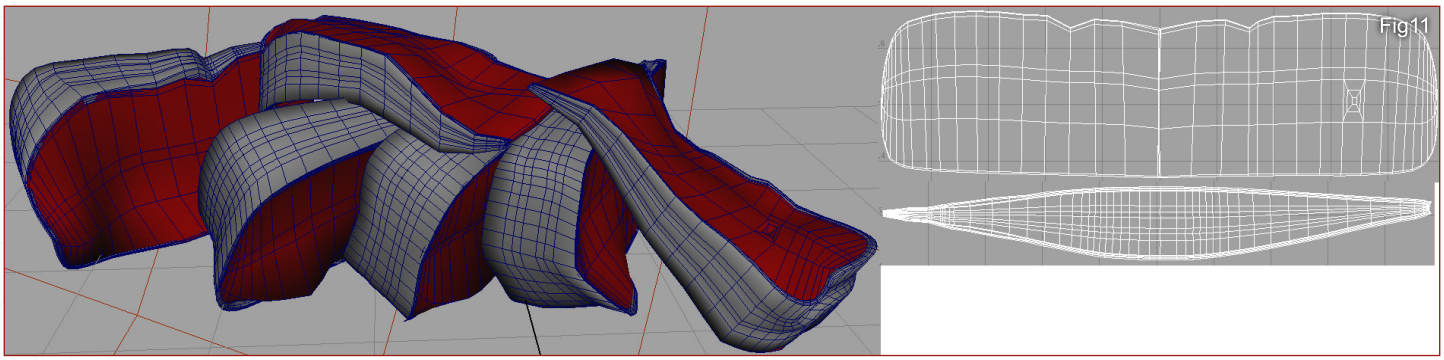

Fig07

For the blue cheese, I used a Polygon cube, shaped it, and then extracted the Polygons to separate the skin and the cheese. I duplicated the skin to make the wrapper. I deleted the polygons at the back of the cheese skin, because no-one will see it. I used a Lattice to bend and shape the wrapper (Fig09). For the almonds, I used a NURBS sphere, converted it to polygons, reversed normals, and UV-mapped it (Fig10). For the Brie, I used NURBS CV curves, which I lofted, and then shaped them by pulling the vertices. I converted the surfaces to polygons and UV-mapped them (Fig11).


Fig08


Fig09


Fig10


Fig11

## SUBSURFACE SCATTERING

For an organic character, the conversion scale will generally remain small. However, the fruits and cheese have translucencies which are a lot higher. Therefore, there will be more noise to balance out, which means higher values for the scale conversion. However, there is more than one way to balance the noise without having such insane numbers for the scale conversion. You can play with the numbers of the samples of the light map, in addition to the minimal numbers of the scale conversion (Fig12). The reason why I said it is important to check your normals earlier, was because NURBS have a tendency to have normals facing inwards. If the normals are facing inwards, light cannot scatter throughout the object and you would therefore not be able to see the real details of the texture maps. In Fig13, the cheese cube on the left looks dry, and you can barely see the textures even with a Specular map. The picture on the right however, the cheese cube looks much more detailed, wet and translucent (Fig13). For all of the cheeses and strawberries, I used Maya's Skin Shader instead of the simple fast shader, because of the control for the specularity and reflectivity attributes. Overall is a tint. Diffuse and Epidermal attributes multiply each other. Subdermal and Back Scatter attributes are where you control how translucent you want your object to be. I found it is mostly the Subdermal weight that you have to play with to get an object more translucent. Primary specularity is where I put the Specular map I created using different sized brushes, and then tinted it very light blue in the colour gain of the strawberry primary specularity. Secondary specularity is where I put a black and white noise map to break the highlight of the strawberries.

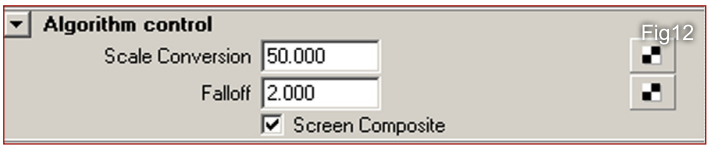
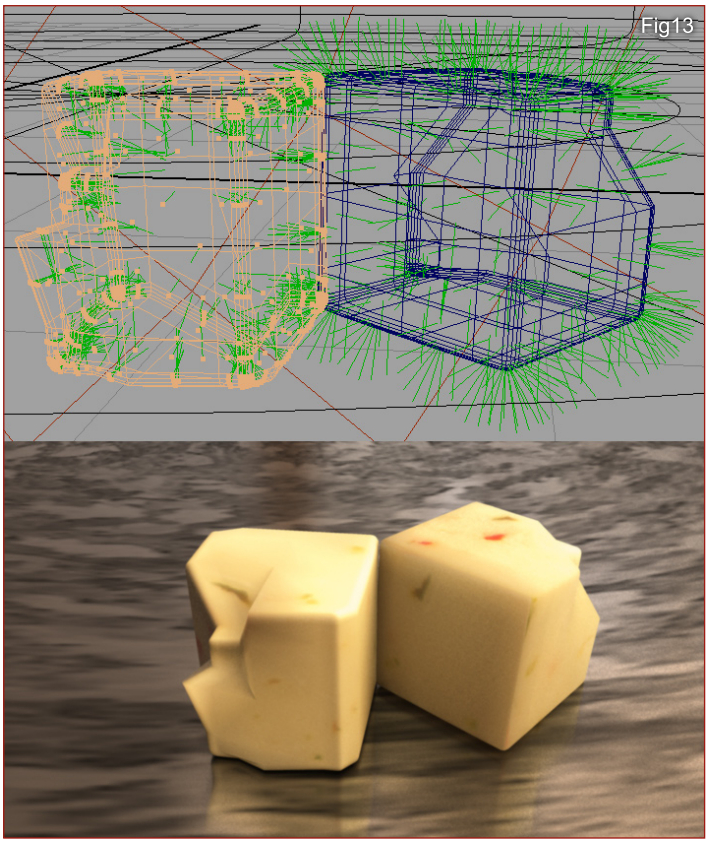
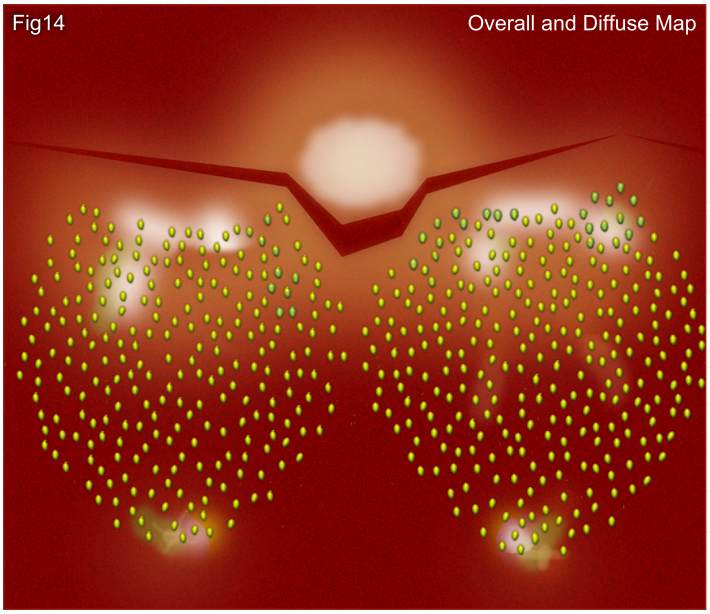


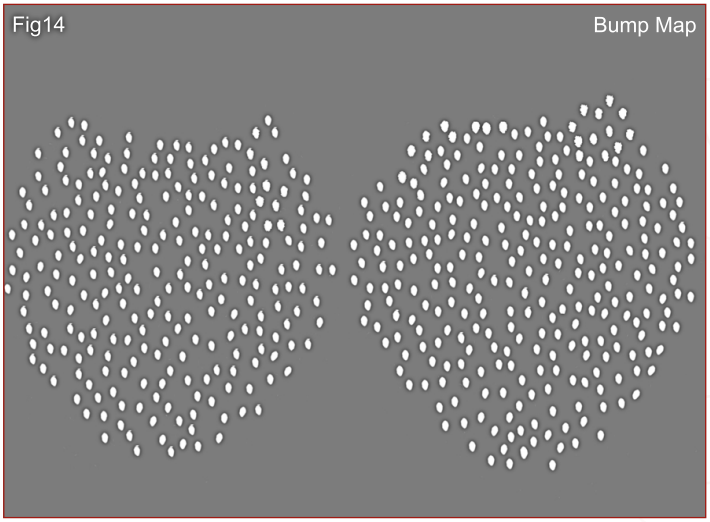
Fig12


Fig13

## THE STRAWBERRIES

Since people keep asking me about the strawberries, I'll tell you how I created them in Photoshop. For the Color Map of the strawberries, I cropped a good looking seed, individually placed them on the UV layout for the imperfections, then duplicated the jpeg seeds several times and merged visible. I did this so that the seeds didn't have that pixilated look from the jpegs that I found on the Internet. Next, I used the Brightness and Contrast tool in Photoshop, and bevelled them so that the seeds had that curvy, "popped out" look without using geometries. For the base colour, I sampled the redness of one of my photographs, then added Noise and Gaussian Blur. Next, I painted the rawness of the strawberry's white and green colour, then blurred and blended in Photoshop. For the Bump map, I duplicated the seed layer, inverted it to achieve the bumped look, duplicated it again, turned it into black, Gaussian Blurred it, then put that layer under the white, bumped layer. This gave the look of the dented strawberry with the seeds popping out. For the Primary Specular map, I used different sized brushes and randomly painted onto the UV layout. As for the Secondary Specular map, I used a Noise filter, played around with the Levels and the Brightness and Contrast settings, duplicated the layers several times, then merged the layers. This was very important, because Maya didn't seem to be able to show the white specs of the noise in the attribute editor when I plugged it into the Secondary Specular Color. So what I did was to bring more of the whiteness out in the noise map, so I could see it in the attribute editor. The following images show the maps of the strawberries and the Skin Shader attributes (Fig14 - 15). For the strawberry leaves, I used an Anisotropic Material and manipulated the sliders for the translucency attributes (Fig16).



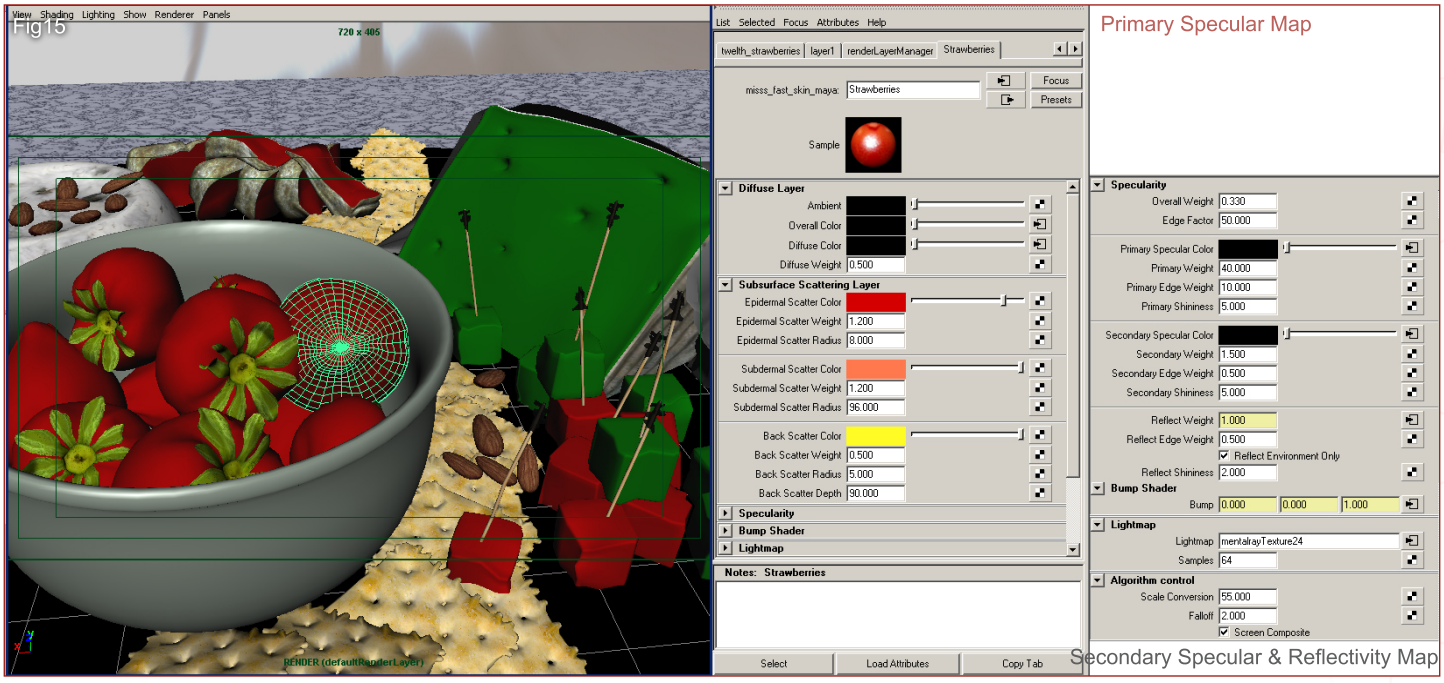




Fig16
Color Map


Fig16
Specular Map

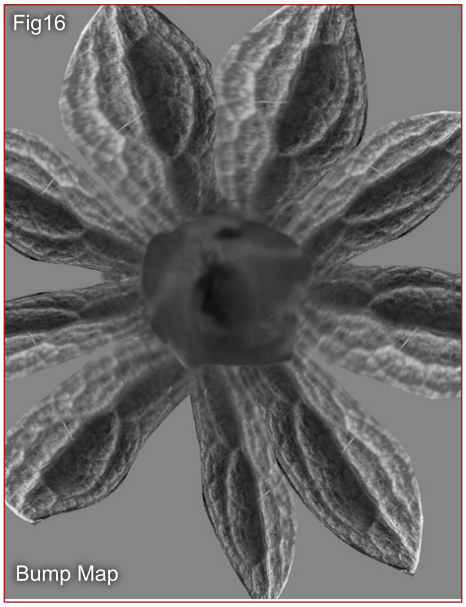

Fig16
Bump Map

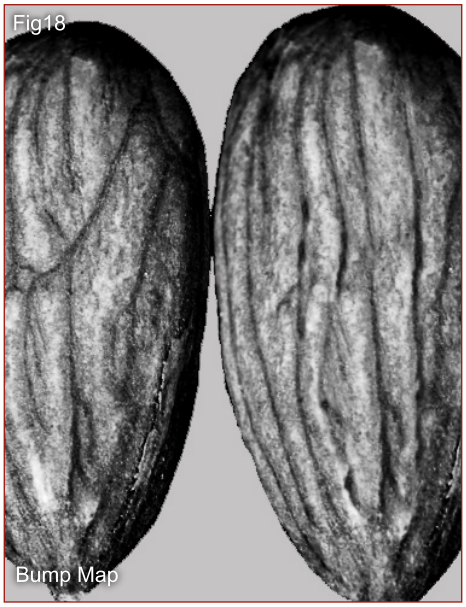

Fig17
Color Map


Fig17
Bump Map


Fig17
Specular Map


Fig18
Color Map


Fig18
Specular Map


Fig18
Bump Map

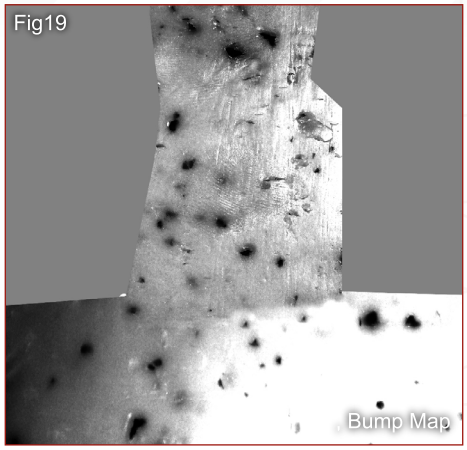
## CRACKERS & ALMONDS

For the crackers and almonds, I used a Phong (Fig17 - 18).

## THE CHEESE

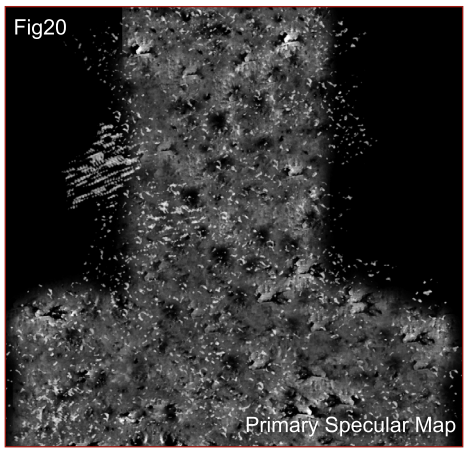
For all the cheeses, I used a skin shader. For the blue cheese skin, I used a Lambert and played around with the translucent values. The same was done for the Brie. For the wrapper, I used a two-sided shader and plugged it in the front and back colour map. For the tray, I used a

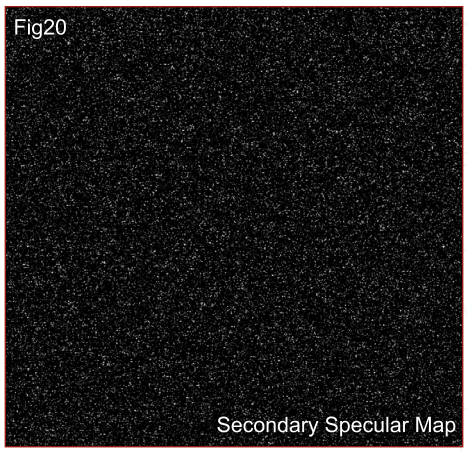


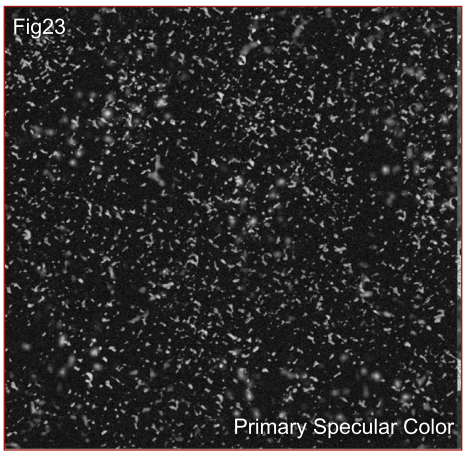



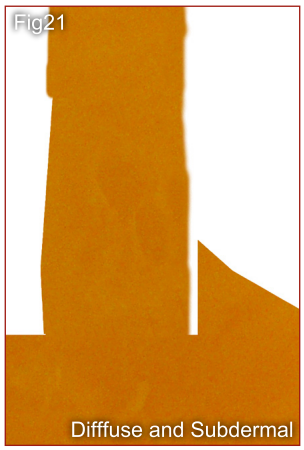






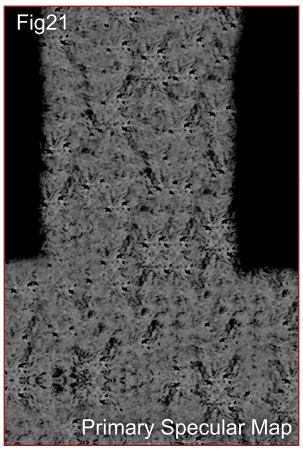



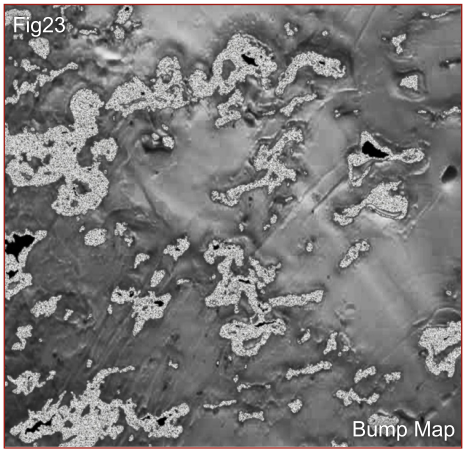



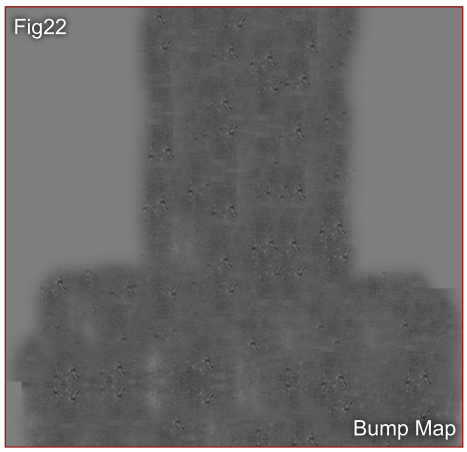



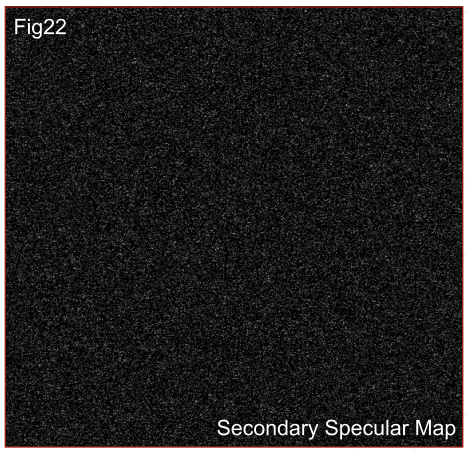






metal texture and plugged it into the diffuse and reflectivity attribute of the MIA material (Fig19 - 23).

## LIGHTING

I used HDRI and one Area light to emit photons with a yellow and orange colour. If you want to show more emotion and make your work seem more appetising, don't use white light! Render with Global Illumination, Caustics and turn Raytracing on (Fig24). **Note about translucency:** The more translucent an object is, the more you will lose the shadows to show depth. But don't let that frustrate you, as this is where post-production work with an Occlusion pass comes in handy!

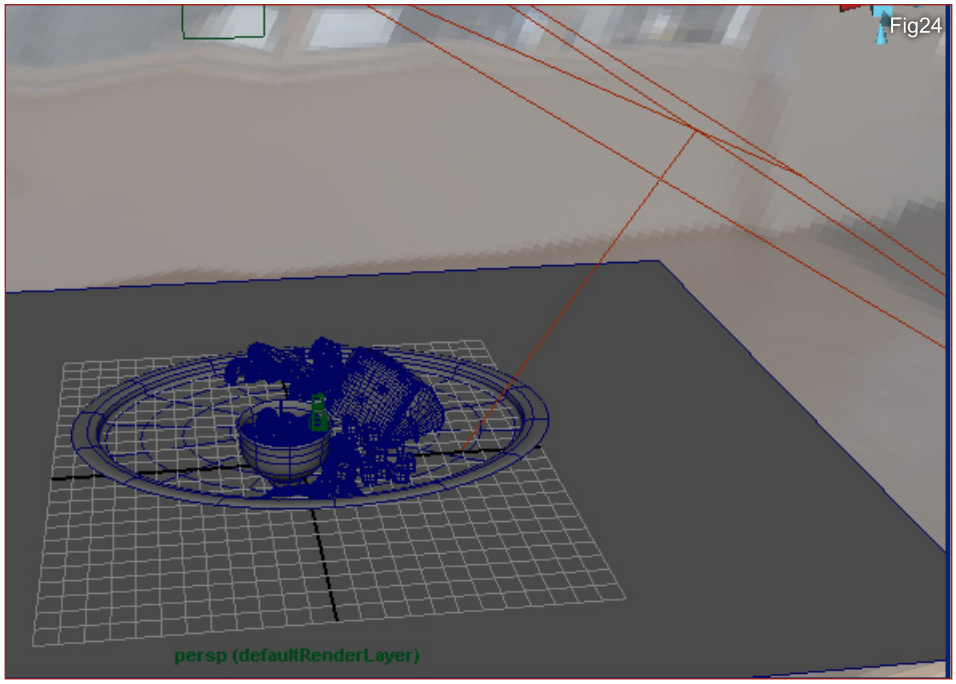


Fig24

## POST-PRODUCTION

Do note use the default Occlusion presets. The shadows are way too dark with this and it looks horrible. You want to be able to control how dark the shadows are, so use the MIB-Occlusion node in Maya 8.5, change the black colour to a dark grey, and play with the sliders. I used two MIB-Occlusion nodes for the scene. Now render the Color and Occlusion passes separately and take them into Photoshop. Duplicate the Color file and put the Occlusion pass in the centre.


Fig25

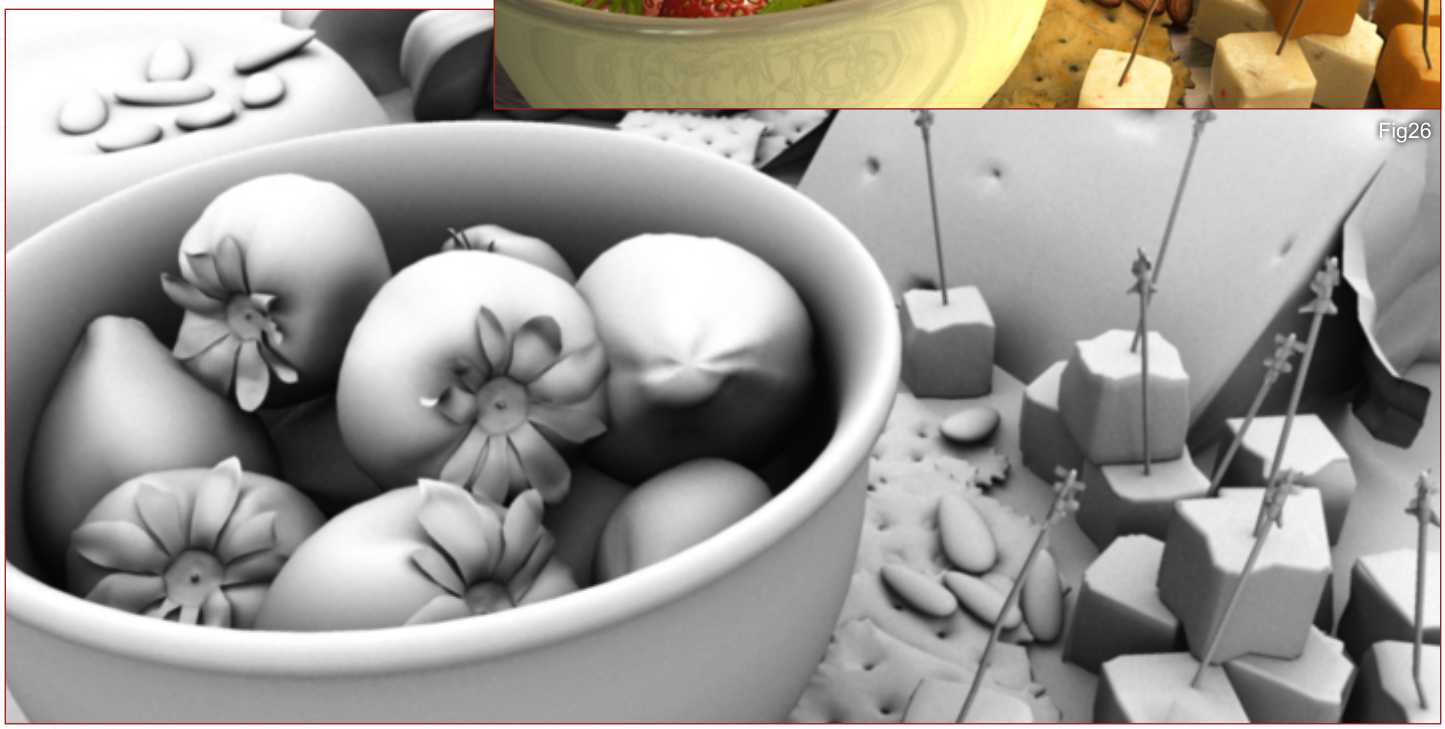

Fig26

Fig27



Use Multiply or Overlay for the Occlusion and play around with the opacity.  For the Color pass layer on top, use a little Gaussian Blur and Screen the top Color file. You can see the original render in Fig25. Fig26 shows the render with the MIB-Occlusion. And Voila! One heavenly cheese platter.  A little warning about using the skin shader and rendering with Mental Ray: if your scene has 90% skin shaders,



like mine, it gets pretty expensive to render even with a Core 2 Duo Processor.  This present scene took a little over an hour to render a frame. Good luck with your own experiments!


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## VOLUME 2

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**The book is more than just an artwork book as, not only does it feature full-colour, full-page images, but each artist has described in detail the creation process behind each published artwork, in their own words, especially for this book.**

**This month we feature:**

## 'Sumo'
by Daniel Moreno








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# Sumo

## By Daniel Moreno Diaz



### Introduction and Concept

I've always been fascinated by the world of Sumo and its ancient traditions. The name Sumo comes from the Japanese word "Sumai", which means "struggle", and is one of the most ancient combat forms. The best fighters (Sumotori) had a privileged social status.

The reason I wanted to do this work, is that we are accustomed to seeing many 3D characters of beautiful women and handsome men with perfect bodies. For example, I had previously made two models of women with these characteristics, and so I wanted to do something different. I therefore decided to model a Sumo wrestler. It was a challenge for me to obtain a good sensation of weight and the fat under the skin, and I have continued studying ways of obtaining a good skin shader.

In the future, I would like to make a short animated film about a fight between two Sumo fighters. For this, I will have to learn a bit about montage, post-production and a few other things first. In animation, it would be a challenge to obtain the movement and the vibration of the skin. But for the moment, I have limited myself to making a video with the character rotating in the scene, in order to learn something of post-production and to gauge the technical limitations that a project like this might present (Fig.01).



Fig.01



The following shots of the Spacegirl book pages are featured here in full-resolution and can be read by zooming in...



Fig.02



Fig.03

In my opinion, the most interesting things to discuss about this work may prove to be the skin shader and the post-production. Therefore I've focused upon these particular aspects in more detail.

### Skin Shader

I think it's important to mention that, for this piece, I have used the V-Ray rendering engine for Autodesk 3D Studio Max, and the lighting was done entirely with only one HDRI map. The scene doesn't contain any other lights. The indirect illumination is set in order that it calculates the primary bounces with an Irradiance map and the secondary bounces with Light cache.

For a long time now, I have been lighting my scenes with V-Ray. It seems to me that V-Ray materials are very effective when trying to mimic reality (Fig.02 and 03).

The textures fulfill a crucial role in building a realistic skin shader. I think that if you want to obtain a good result, the best thing to do is to use photographic retouched textures, but you have to ensure that any lighting information in the photograph (light and shade), has been eliminated. Ideally you only want to keep the color information (Fig.04).

The color of skin has a variety of tones, as well as green, blue and purple hues, apart from the dominant skin color. I think it's more difficult and laborious to obtain the same result purely by painting it by hand. If we left the lighting information in the photograph, we would be simulating a non-existent volume on our model. Our aim must be that the entire volume of our model comes from the modeled details and from the bump and displacement maps (Fig.05 and 06).

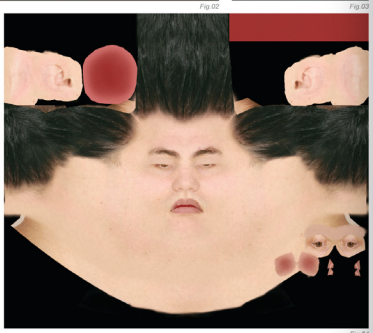


Fig.04



Fig.05

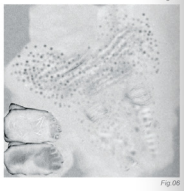


Fig.06



For this model I used two different materials, one of which was a falloff (shadow/light) in the diffuse slot to mix two maps (Fig.07). One uses the normal skin color and the other uses the same map turned to orange by way of Color Balance in Photoshop. In this way you see the normal skin tone in the diffuse areas and the orange-colored tone in the shaded zones. This is a way of faking translucency, as it simulates a sub-surface scattering shader. This method is also very useful when doing an animation as it diminishes the render times by some margin.

Using this material I created the base render of the complete character (Fig.07 and 08). Material 2 is a material with translucency (sub-surface scattering).

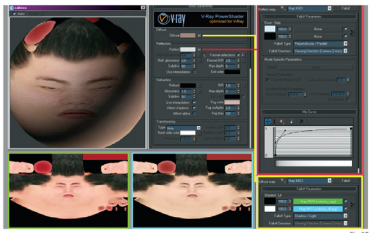


Fig.07



Fig.08

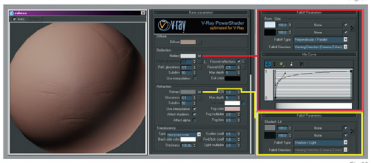


Fig.09



Fig.10

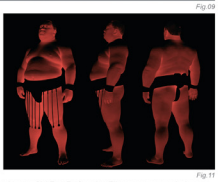


Fig.11



Fig.12



Fig.13

I used this type of material to extract a layer of V-RayRefractionFilter, a gray scale layer which you can color using the Color Balance in Photoshop, to create a red-orange tone. Once you have this layer, you can add it to your Adobe After Effects composition. (Fig.09–12).

The reflection on the skin is also an important point to bear in mind for a sense of realism. The ideal thing is to control it with a gray scale map; this way we can control the extent in which the zones are reflective. However, in this work, I have not used it, because the camera is for a middle distance render and I needed to optimize the resources for a possible animation. If the work was a close-up of a face, it would be advisable to use this map. In this particular case, I used a falloff map (Perpendicular/Parallel) in the Reflection slot, changing the Mix Curve, and in this way obtained a light diffusion similar to that for real skin (Fig.13).

## Post-production

For the post-production I used Adobe After Effects. In 3D Studio Max, through the Render Elements window, I wanted to extract the color layer (V-RayDiffuseFilter) and two layers of reflection (V-RayReflection and V-RayReflectionFilter), but the V-RayDiffuseFilter couldn't recognize the falloff between two textures that I used. As a result, I made a single-layered render of the complete character with the diffuse color and the reflections in one pass.

The following were the layers used for the final composition in After Effects:
1: The background layer done in Photoshop (Fig.14).
2: The complete character layer done with material 1 (Fig.08).
3: The V-RayRefractionFilter colored from material (Fig.11).
4: The Light map for occlusion (this layer was made with a gray material without reflections and speculars, and used the scene illumination The HDRI Map) (Fig.15).
5: The Z-depth (for the depth of field) (Fig.16).
I used the .tga file extension with 32 bits to save the alpha channel of all of these layers.

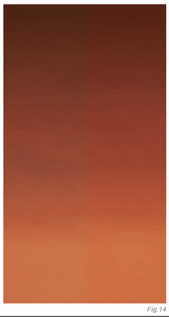
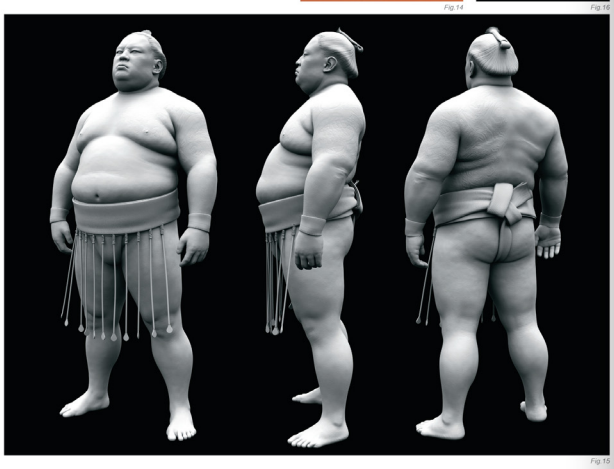

Fig.14


Fig.16


Fig.15



I went on and composed all of the elements in After Effects. Most of the post-production software works in a similar way to Photoshop, where you combine many layers. You need a background layer under the stack, and then you simply add different layers above, controlling the manner in which the layers are mixed (add, multiply, and so on). For this particular work I mixed them in the form as seen in Fig.17 and 18.

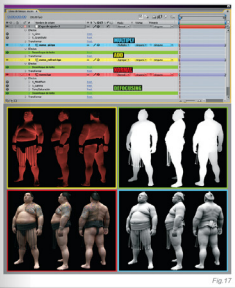
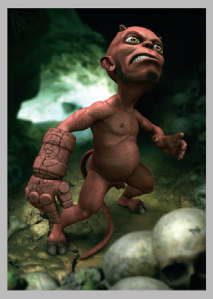

Fig.17


Fig.18

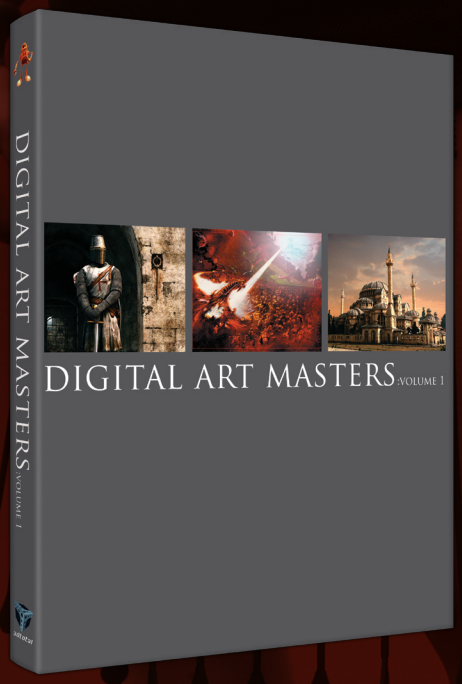
## Artist Portfolio







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# 3D environment lighting

3ds max

'3D Environment Lighting' is our new 6-month tutorial series. Over the course of the next six months, this series will be detailing techniques on lighting an environment under a number of different conditions. Each month we will cover a step-by-step guide to setting up lights, aimed at portraying the scene in a specific manner. The various tutorials will be tailored to specific software packages and each will aim to show a comprehensive and effective way of lighting an interior of a ship that includes both natural and artificial light. These will include a sunny afternoon, sunset, moonlight, electric light, candle light, and finally a submerged submarine light. The schedule is as follows:

Issue 023 July 2007

## Natural Exterior Lighting Sunny Afternoon

Issue 024 August 2007

## Natural Exterior Lighting Twilight

Issue 026 October 2007

## Natural Exterior Lighting Moonlight

Issue 026 October 2007

## Artificial Interior Lighting Electrical

Issue 027 November 2007

## Artificial Interior Lighting Candlelight

Issue 028 December 2007

## Artificial Exterior Lighting Underwater

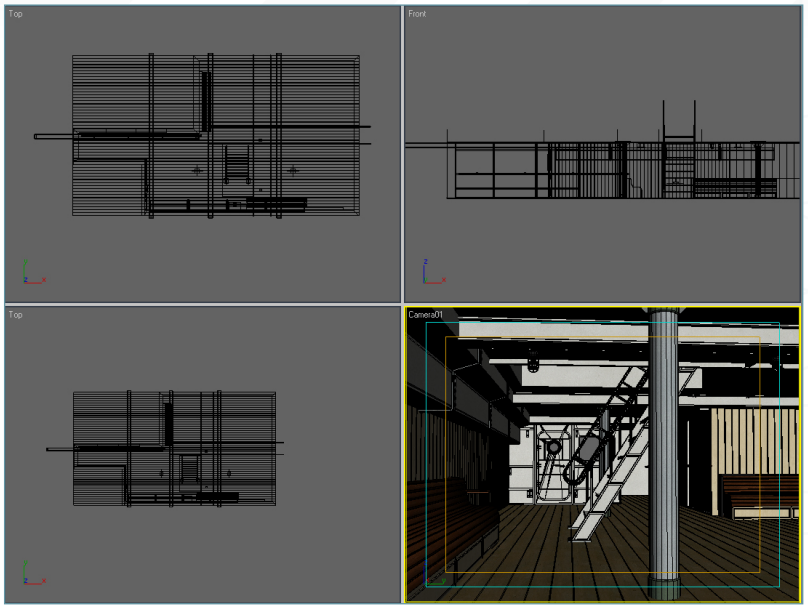
Continued...

# Environmental Lighting Part 4 - Electrical

This month we'll see how to create an artificial lighting situation for our ship cabin scene. As usual, we'll use 3ds Max and Mental Ray. Before we can start, we need a little information about how artificial light works. I suggest you do a quick search in Google for reference images; you'll notice that large spaces are lit by a fair number of light bulbs, which usually give general lighting a strong, greenish component.

01. Open the ShipCabin_Part4_Start.max scene file (download can be found at the end of this tutorial; click on the Free Resources logo) (Fig01).

Fig 01



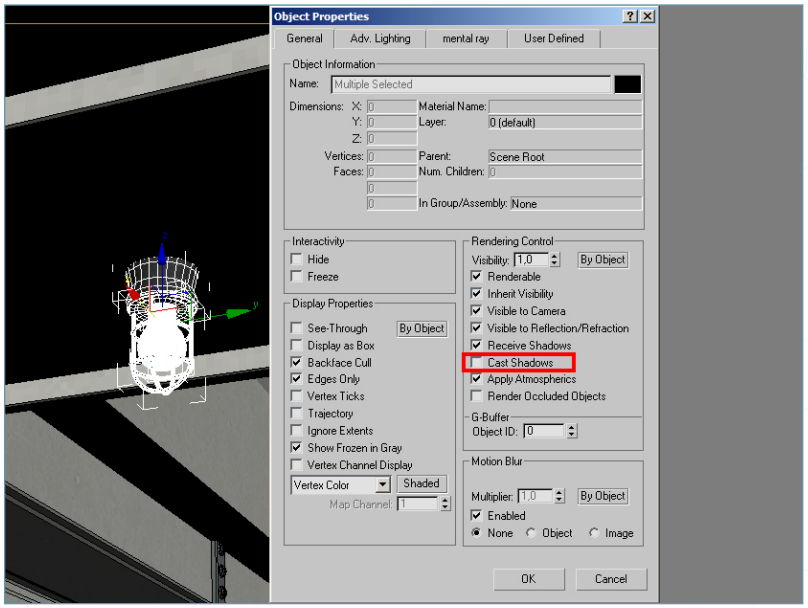

02. The two main light sources will be the light bulbs on the ceiling (Fig02).

Fig 02




03. Since we'll be placing the lights right in the bulbs, we need them not to cast any shadows. Select the three objects (the light bulb, the guard and the base) and right click on them. In the menu that appears, click on Object Properties. Then disable the Cast Shadow option in the Rendering Control area (Fig03).

Fig 03



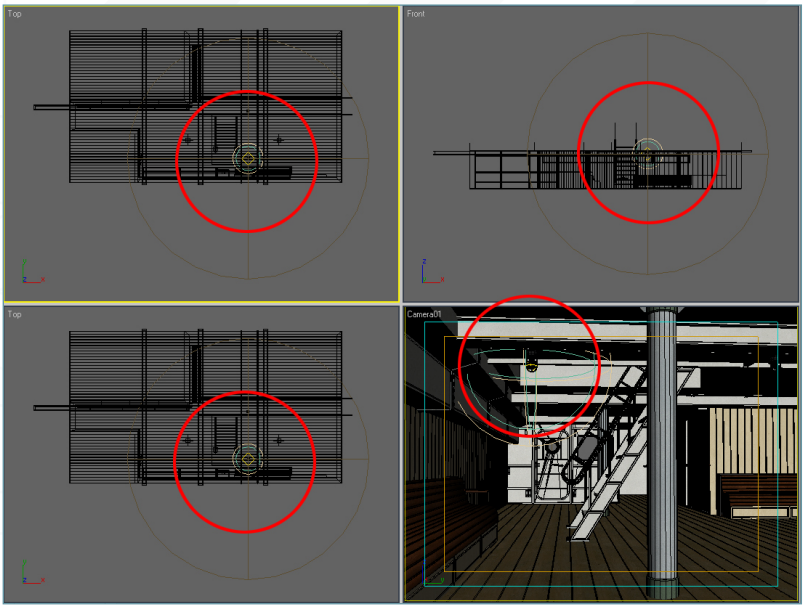


Fig 04

04. Now we can create the first Omni light which will act as a light bulb. Create a mental ray Area Omni light and position it as shown in Fig04.

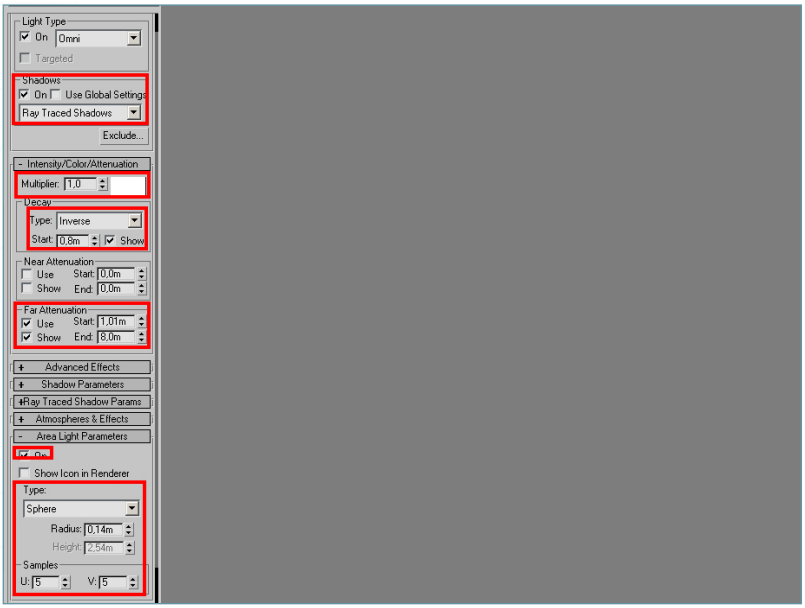



Fig 05

05. Leave the colour of the light as pure white and its Multiplier at 1,0. Enable Shadows and change the type to Ray Traced Shadows. In the Decay section, set the type to Inverse and the Start value to 0,8. Also enable the Show option to have a visual aid in your scene. In the Far Attenuation section, enable both Use and Show and set the Start/End values to 1 and 8. Open the Area Light Parameters roll-out and make sure that On is selected. In the Type roll-out, pick Sphere and set its radius to 0,14. Finally set the Samples values to 5 (Fig05).

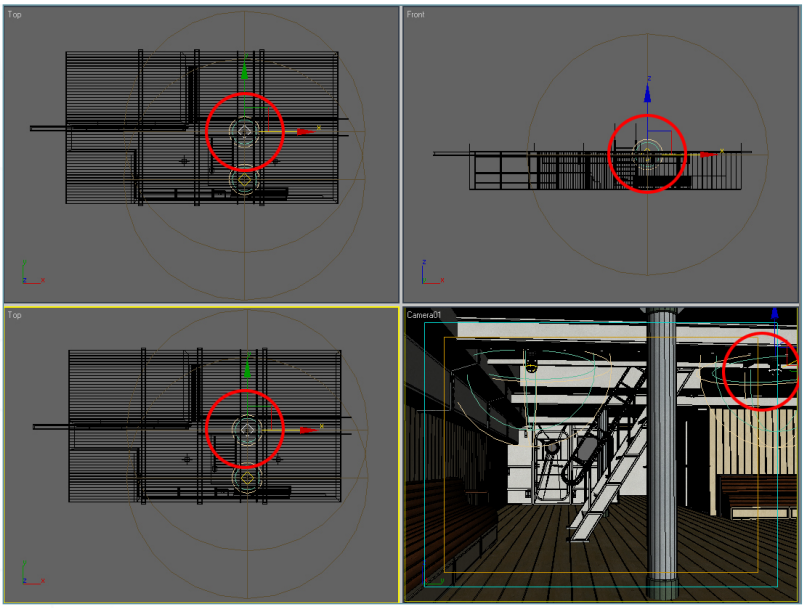
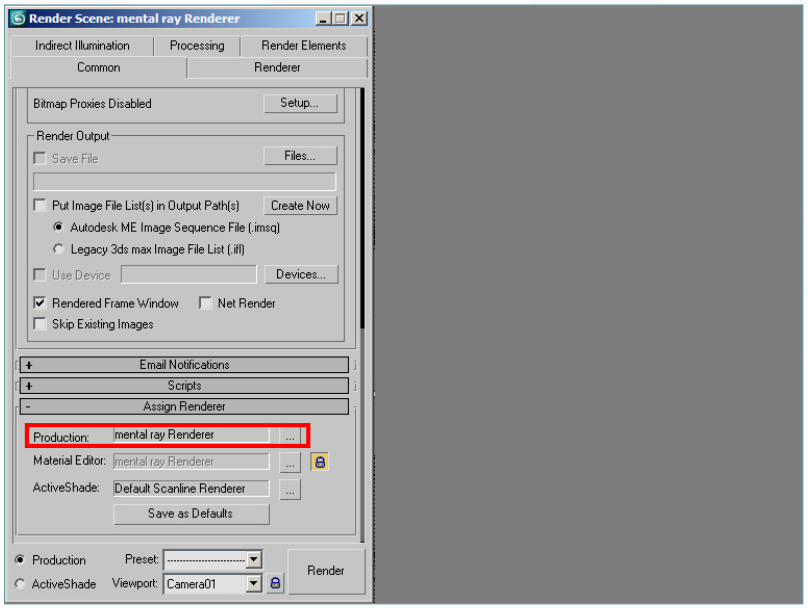


Fig 06

06. Now simply clone the Omni light and position it right in the second light bulb (Fig06).

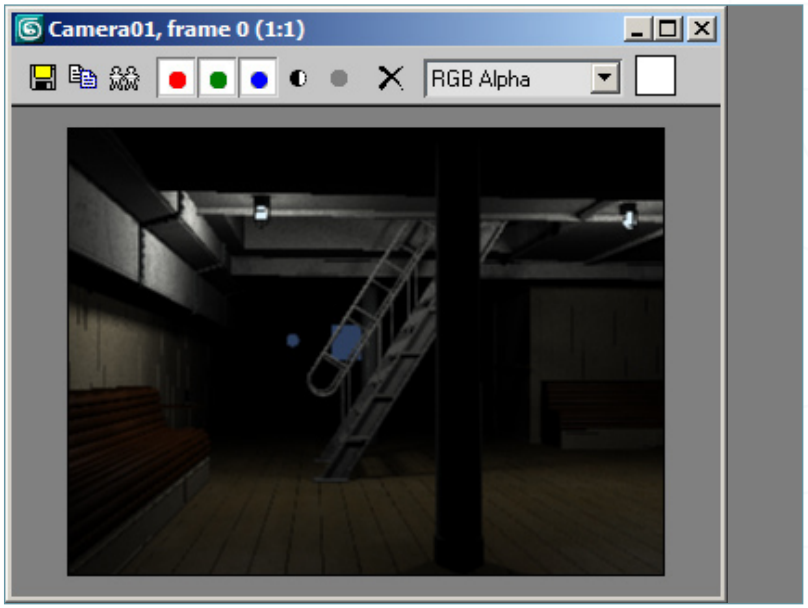
07. Open the Rendering panel and assign mental ray Renderer in the Production slot (Fig07).

Fig 07



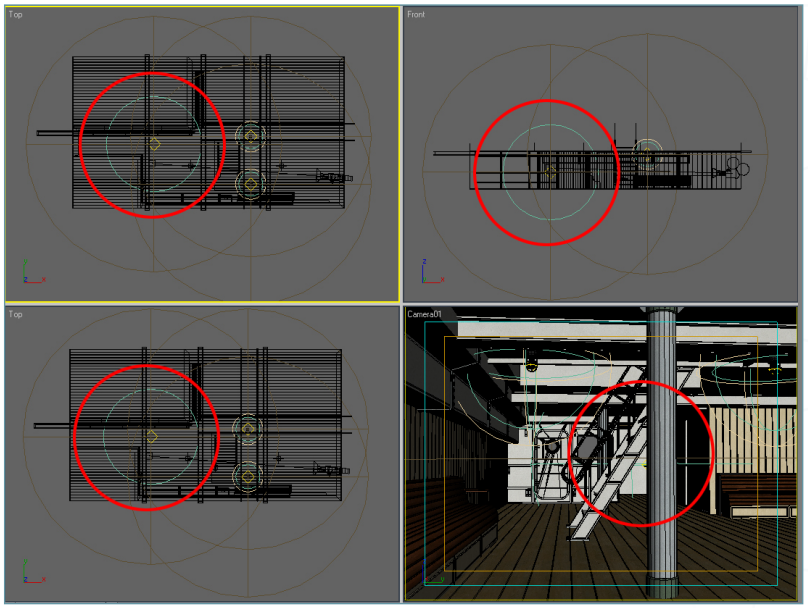

08. Render the scene to see how the two Omni lights are behaving (Fig08).

Fig 08




09. The amount of light in the front is quite good, but the back of the room is completely dark. We therefore need to create another Omni light over there (Fig09).

Fig 09



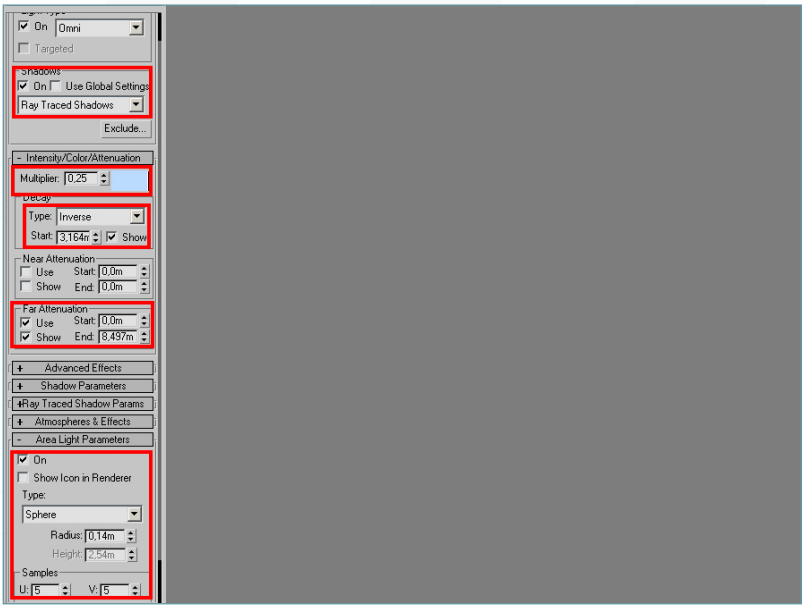



Fig 10

10. Modify the light parameters as shown in Fig10. The important thing here is to lower the intensity of the light (to about 0,25), and give it a darker colour (Fig10).

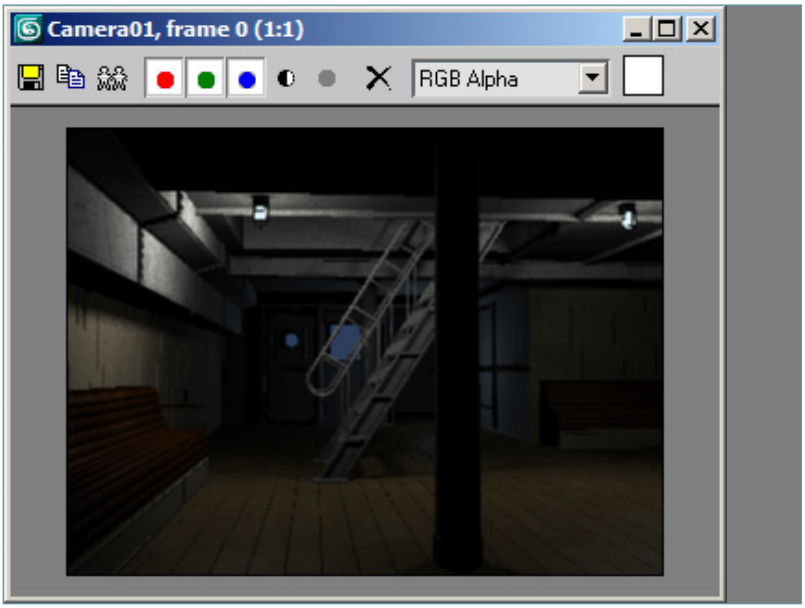



Fig 11

11. Render the scene again. Now there's some light in the back, too (Fig11).

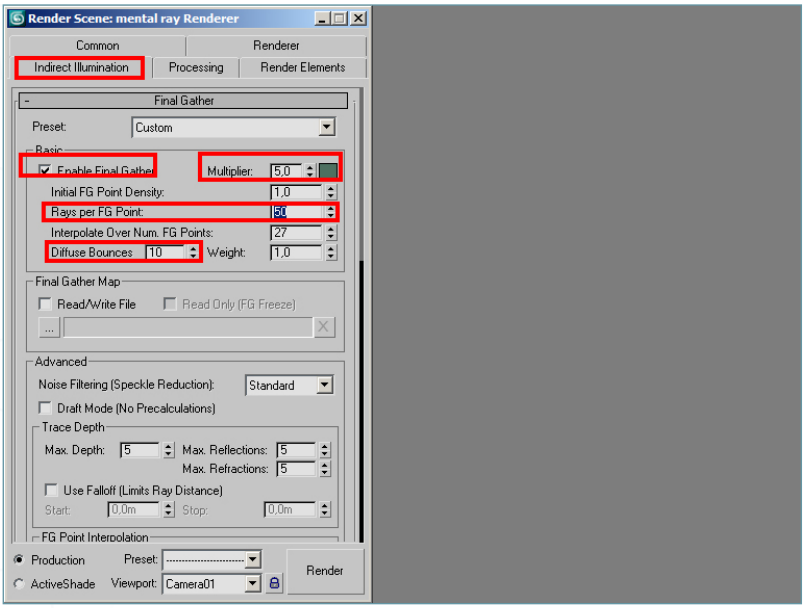
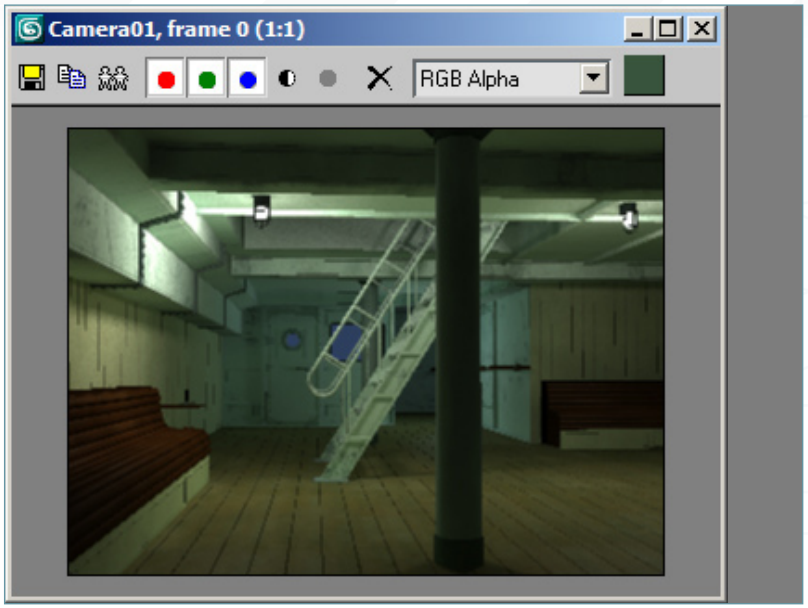



Fig 12

12. Open the Rendering panel and switch to the Indirect Illumination tab. Enable Final Gather and set its Multiplier to 5. Also change its colour to a fairly dark green. Set the Bounces to 10 and leave the Rays to 50 (this is just a test rendering and we'll increase the quality later) (Fig12).

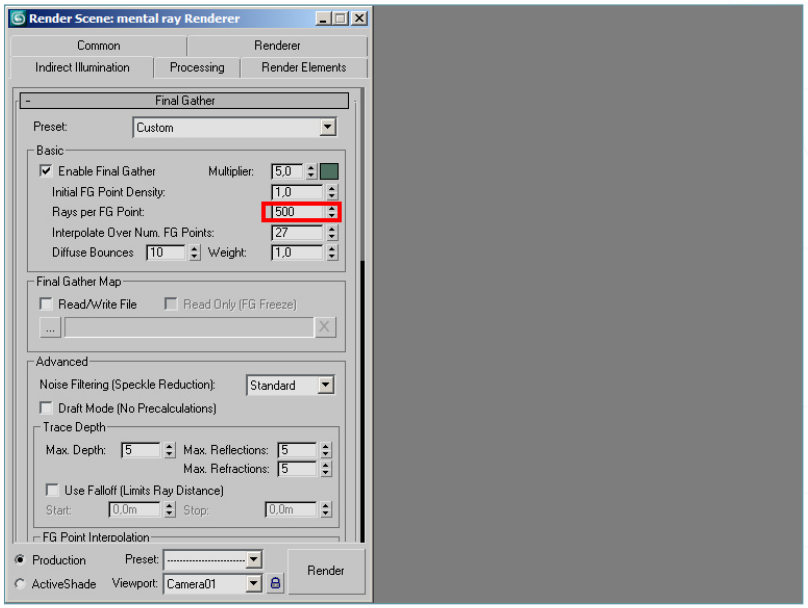
13. Render the scene again. Now there's much more light in the scene (Fig13).

Fig 13




14. Now we can increase the Rays to 500 to have a better quality for the FinalGather solution (Fig14).

Fig 14




15. Open the Rendering panel again and switch to the Renderer tab. Set the Minimum/Maximum values to 16/64 and the Filter type to Mitchell. Also set the values for Spatial Contrast to 0,02 (Fig15).

Fig 15

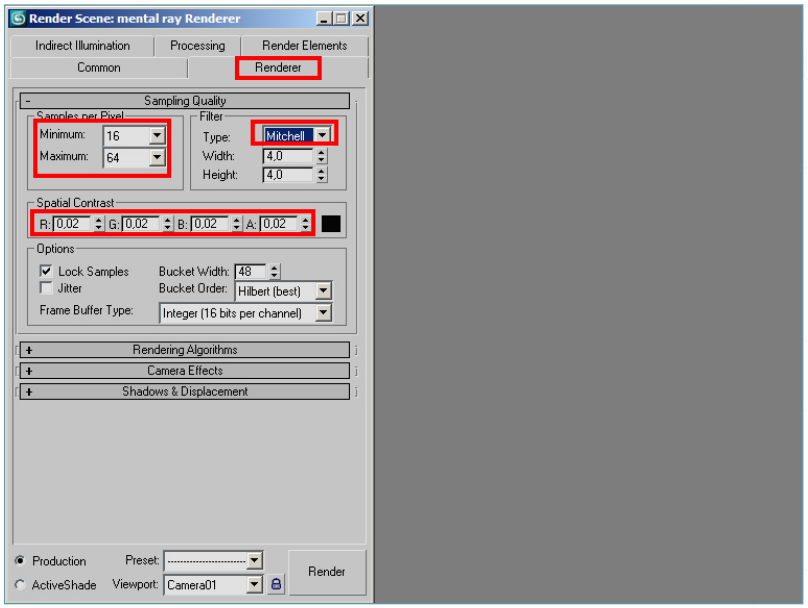




Fig 16

16. Now we can render the scene with full quality and save it as a picture (Fig16).

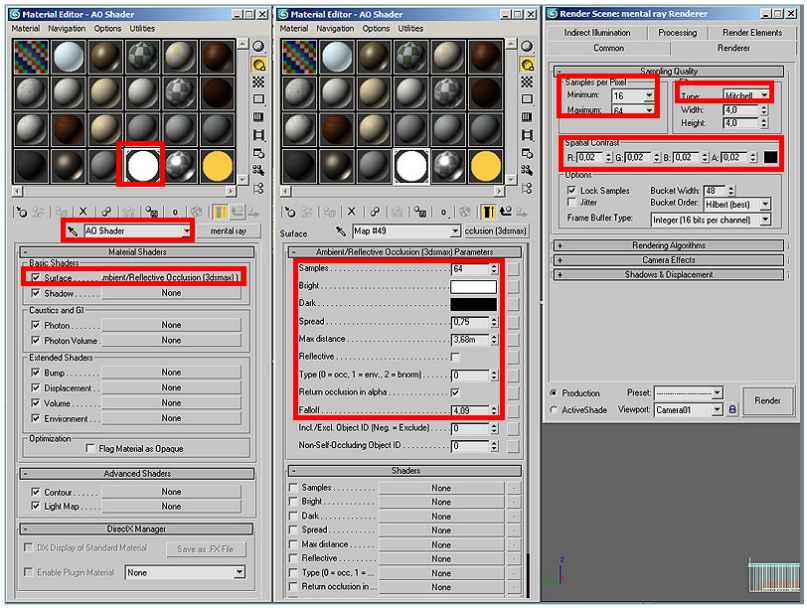



Fig 17

17. As usual, we also need an Ambient Occlusion pass to composite it over the original render in Photoshop. Open the ShipCabin_ Part4_AO.max scene file. In Fig17, you can see the AO shader that was created and assigned to every object in the scene.

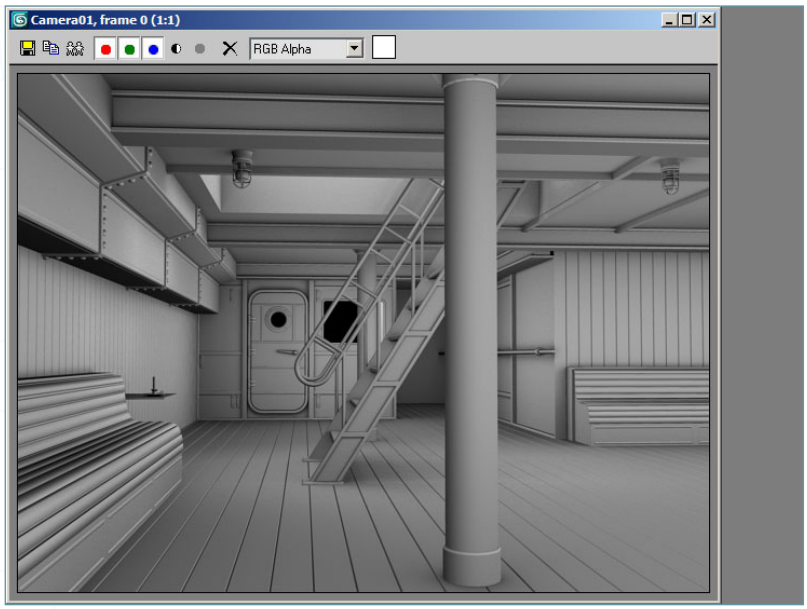
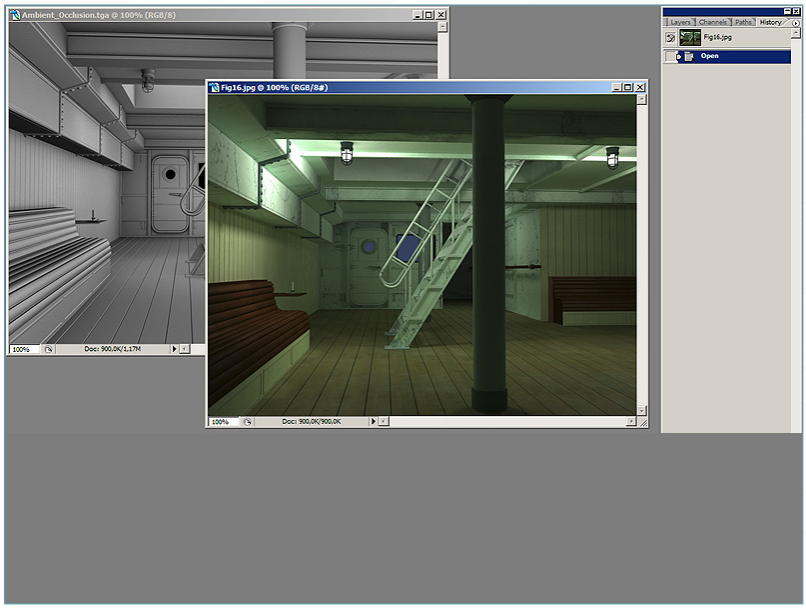



Fig 18

18. Render the AO scene and save it as a picture, too (Fig18).

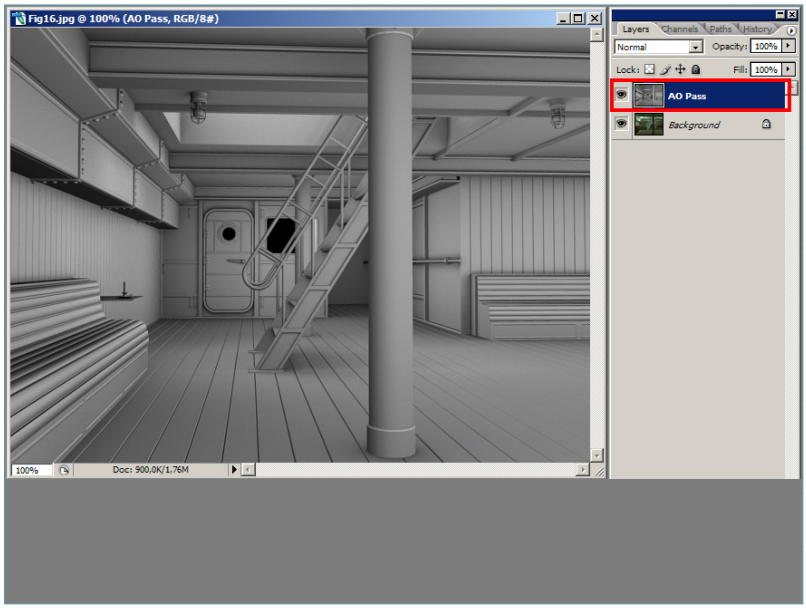
19. Open both pictures (the original render and the AO pass) with Photoshop (Fig19).

Fig 19



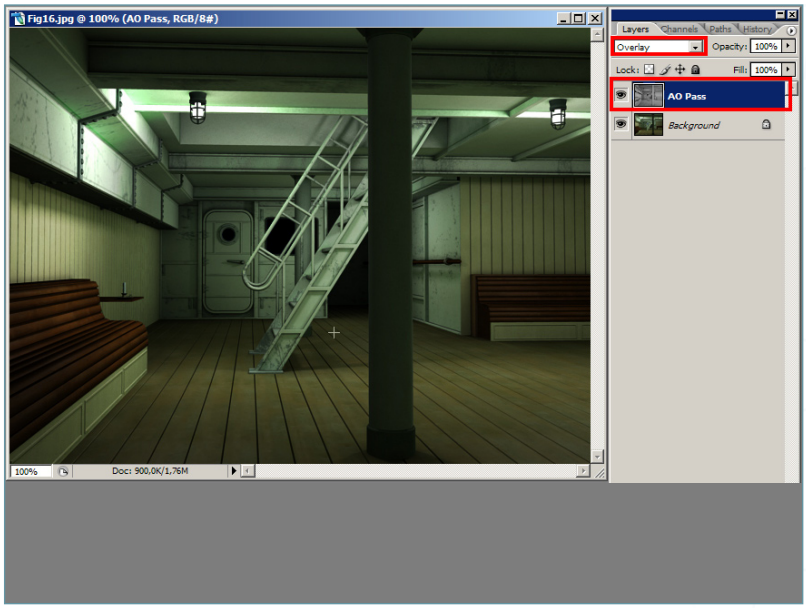
20. Select the AO pass, copy it and paste it over the original rendered image (Fig20).

Fig 20




21. Change the AO pass layer's blending mode to Overlay (Fig21).

Fig 21



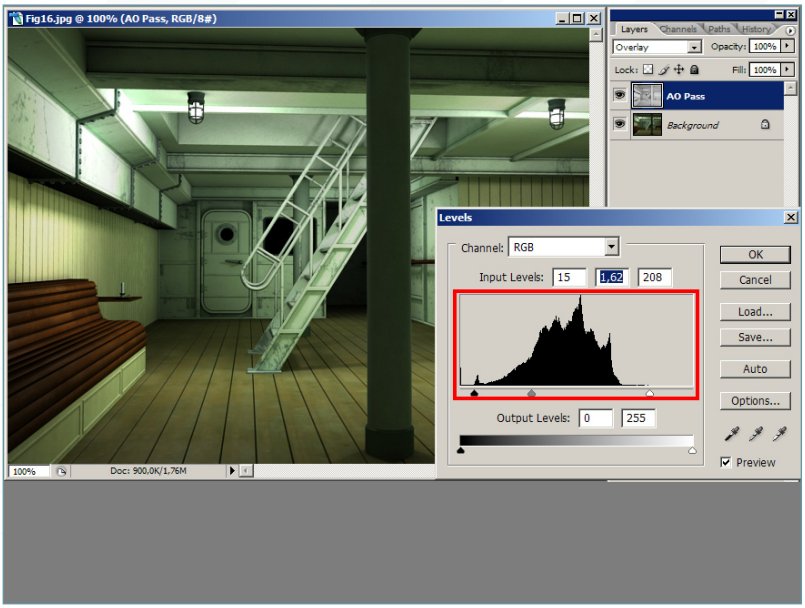



Fig 22

22. Use the Levels tool to adjust the contrast of the AO pass over the original image (Fig22).

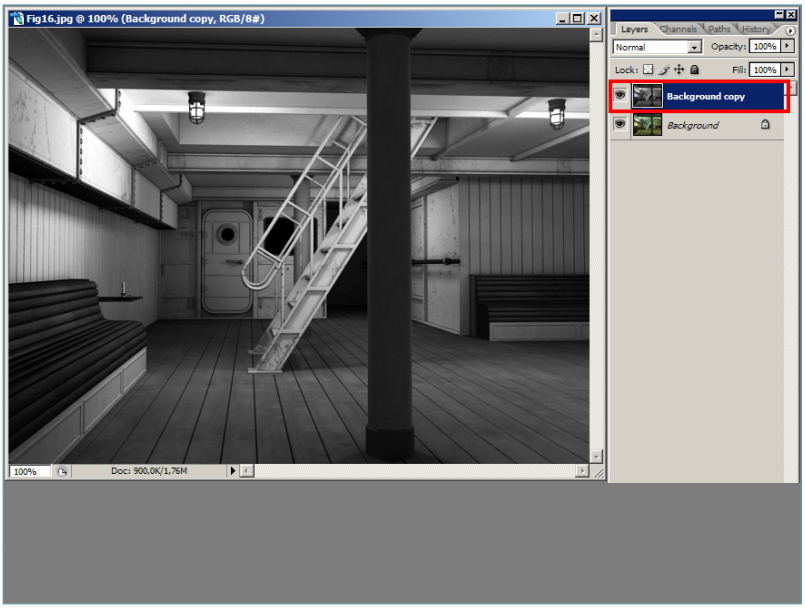



Fig 23

23. Flatten all the layers together, then create a copy of the Background layer and desaturate it (Fig23).

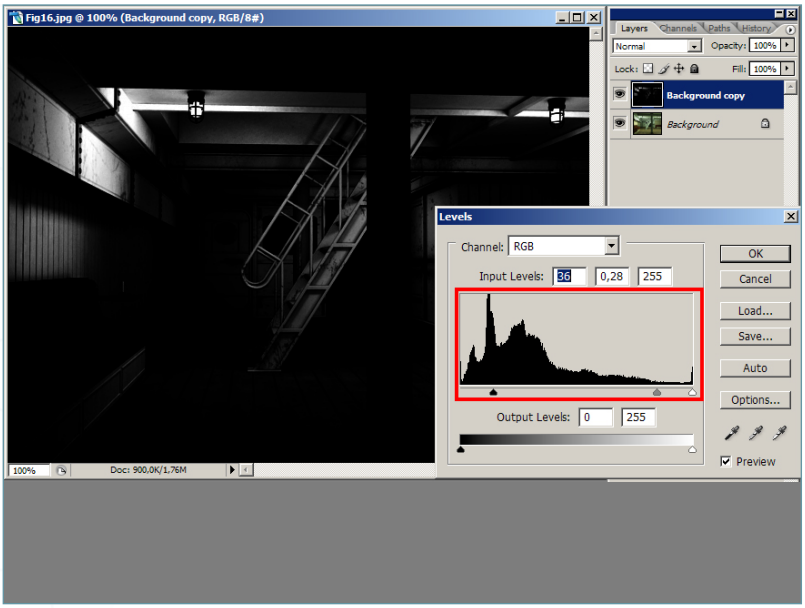
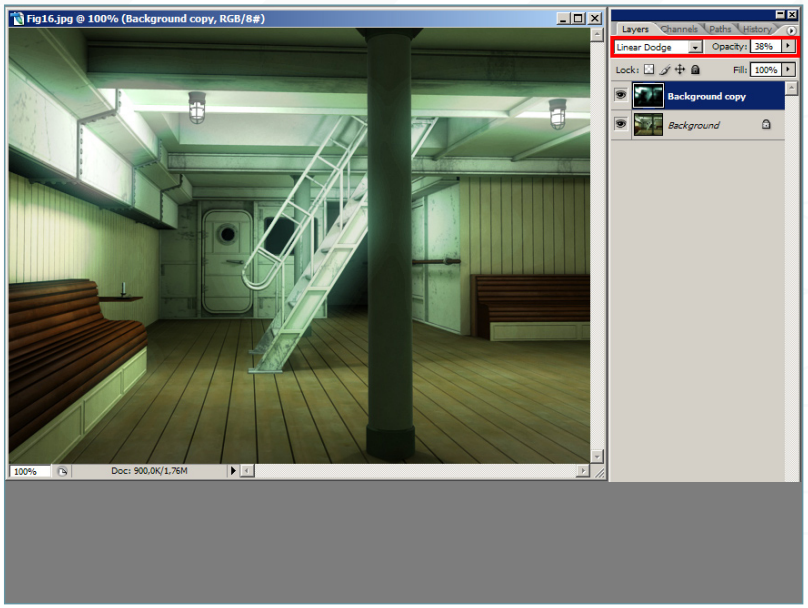



Fig 24

24. Adjust the Levels to expose the areas with more light (Fig24).

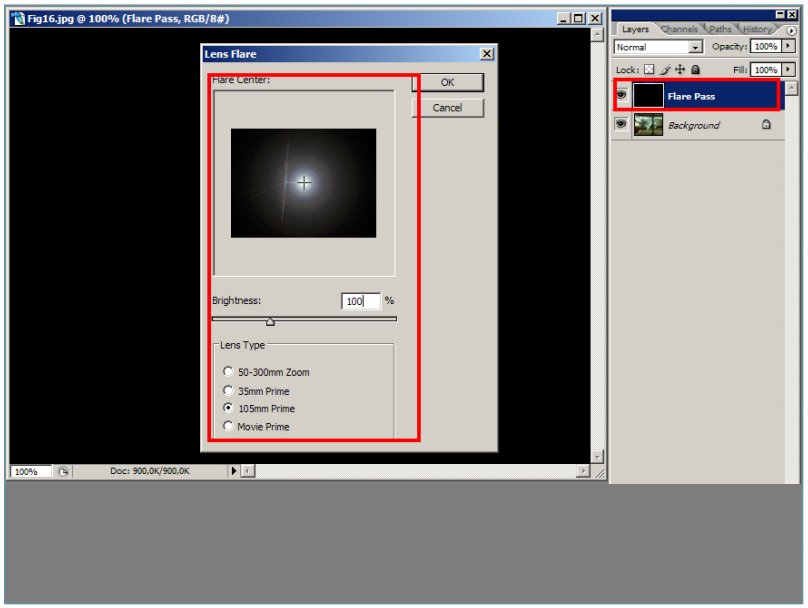
25. Change the blending mode to Linear Dodge and set the Opacity to 38% (Fig25).

Fig 25



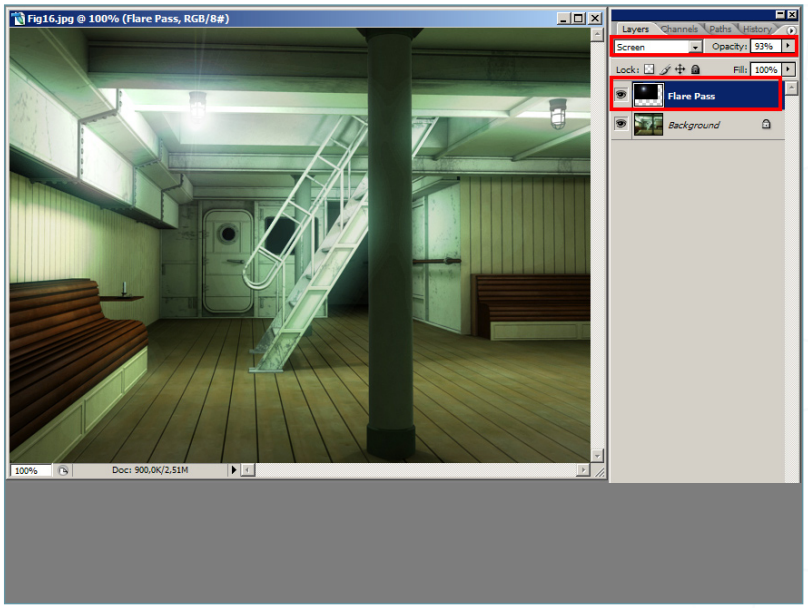

26. Flatten all the layers together. Create another blank layer and fill it with pure black. Apply a Lens Flare filter, as shown in Fig26. Move the flare over the light bulb on the furthest left (Fig26).

Fig 26




27. Change the Blending mode for the Flare layer to Screen and set its Opacity to about 90% (Fig27).

Fig 27



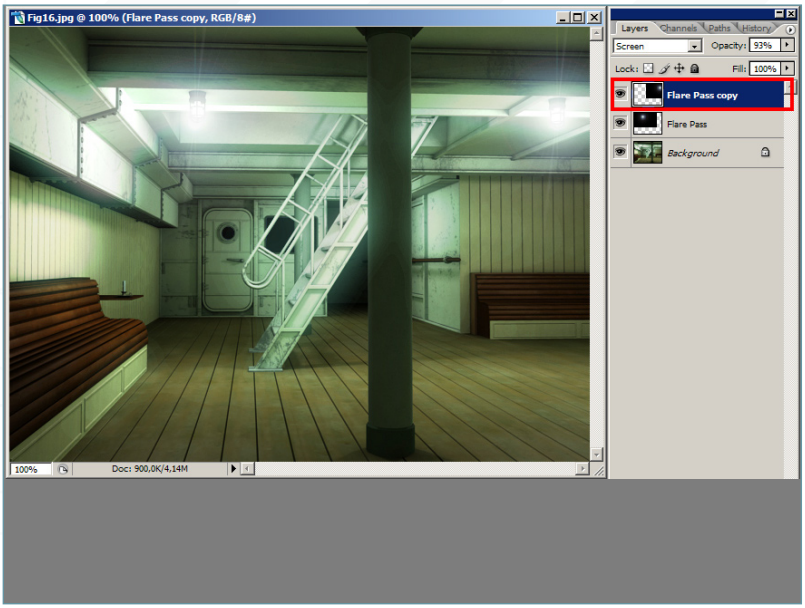


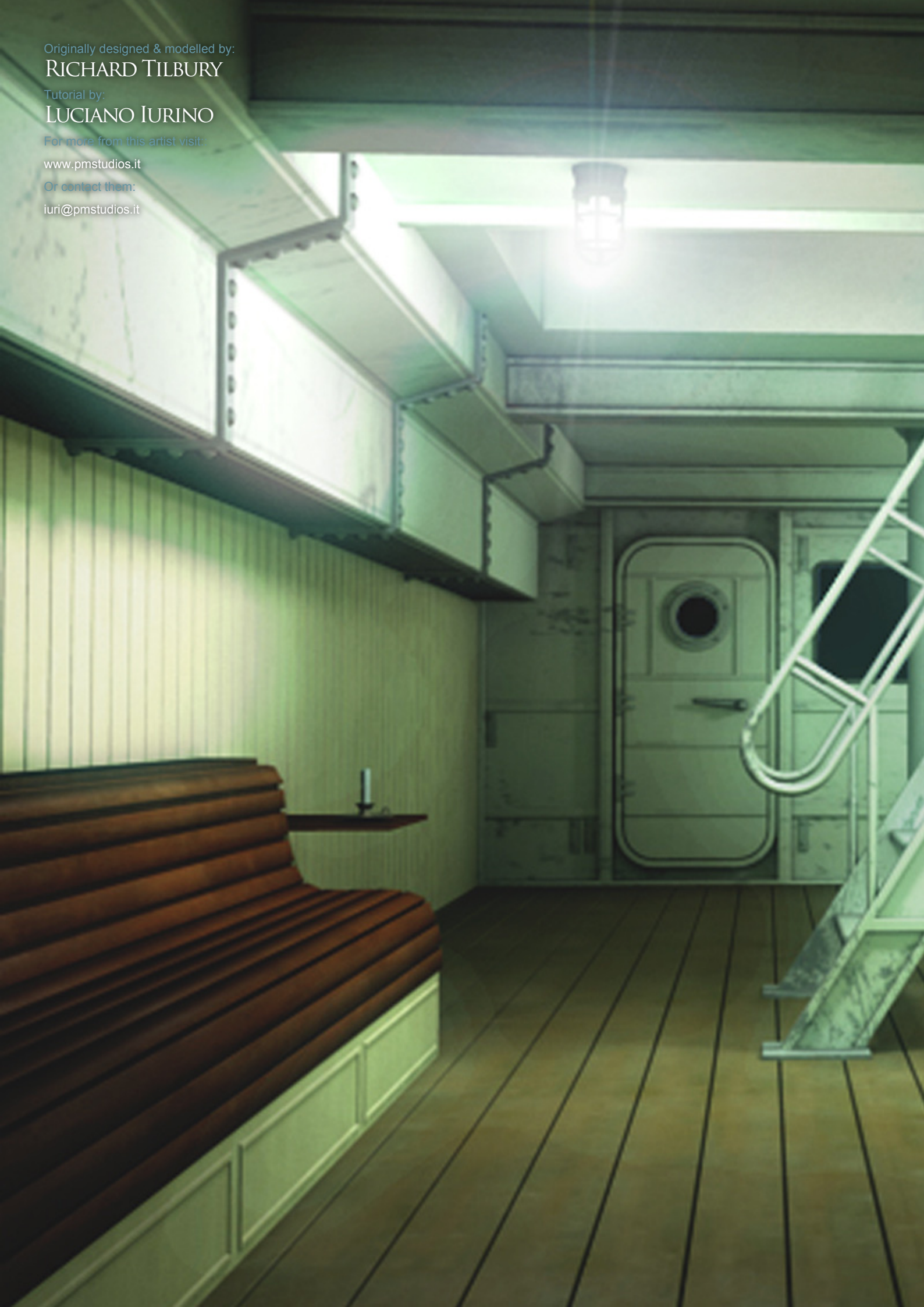

Fig 28

28. Duplicate the Flare pass and position it over the second light bulb (Fig28).

Fig 29

29. Finally, you can use the Exposure tool and the Shadow/Highlight tool to enhance the image as you wish (Fig29).





Originally designed & modelled by:
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# 3D environment lighting

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## Artificial Interior Lighting Electrical

Issue 027 November 2007

## Artificial Interior Lighting Candlelight

Issue 028 December 2007

## Artificial Exterior Lighting Underwater

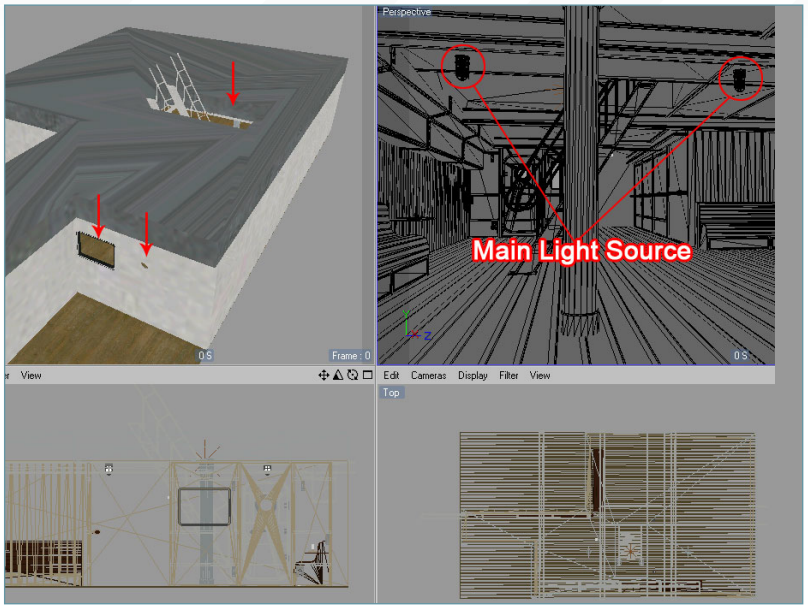
Enjoy...

# Environmental Lighting Part 4 - Electrical

01. Hello and welcome back to this series of tutorials about Environmental Lighting. This month, we'll see how to illuminate our ship cabin using artificial light. First of all, open the scene and examine it (download can be found at the end of this tutorial; click on the Free Resources logo).

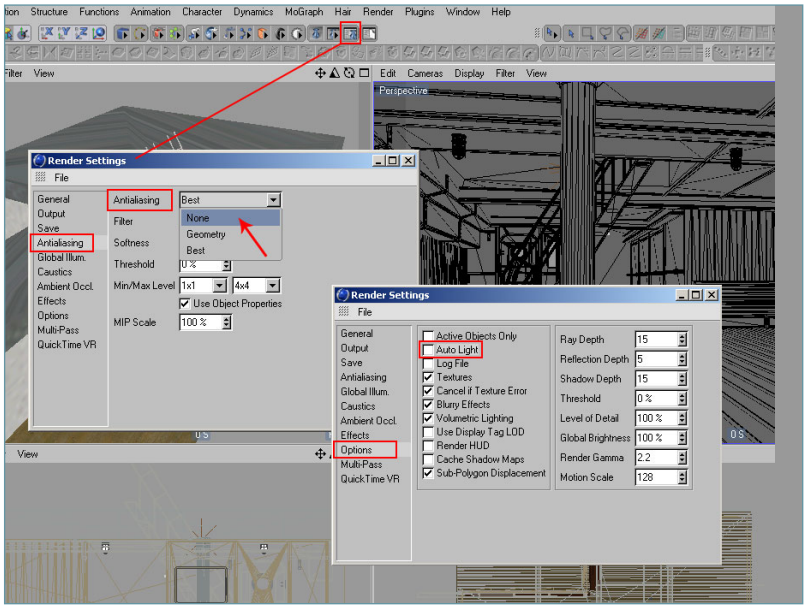
You can see from Fig01 that there are two light bulbs in the scene, which will be our main light sources. The scene is fully closed with just one opening on the ceiling and two windows in the door, as shown on the top-left of Fig01.

Fig 01



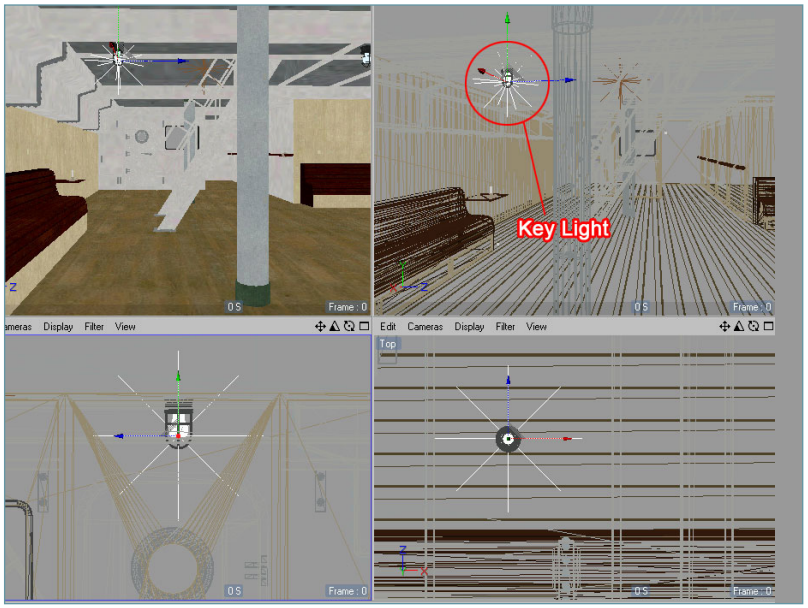

02. As usual, we will use Global Illumination for this tutorial, so I suggest that you disable the Antialiasing (AA) parameters and turn the Auto Light off, as seen in Fig02.

Fig 02




03. Create a Light and position it in the light bulb, as shown in Fig03. This Omni light will simulate the electric light generated from the light bulb.

Fig 03



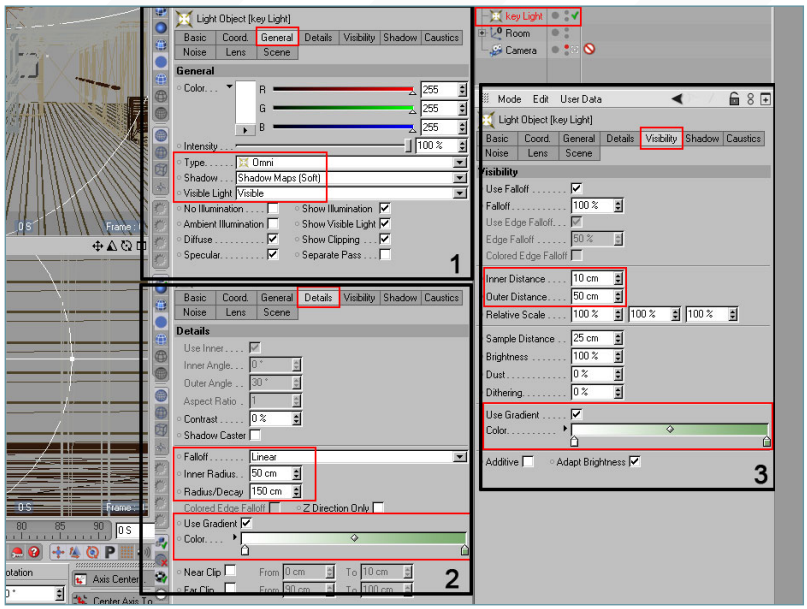


Fig 04

04. Select the Omni light that you just created and go into its properties (Fig04). The first stage, as seen in the top left of Fig04, shows the General control panel. Here you can modify the following parameters: Color, Intensity, Type, Shadow and Visible Light. In this case, the colour of the light will be white and its intensity will have a value of 100%. Choose the Shadow Maps for the shadow, and enable Visible Light. The second stage of Fig04 shows you the Details parameters. Here you can enable the Falloff and choose the Linear type. Modify the Inner Radius and Radius/Decay, as shown in Fig04. Lastly, enable Use Gradient and change the colours, as seen in Fig04. In stage 3, change the Inner Distance to 10cm, the Outer Distance to 50cm, and also enable also the Use Gradient parameter.

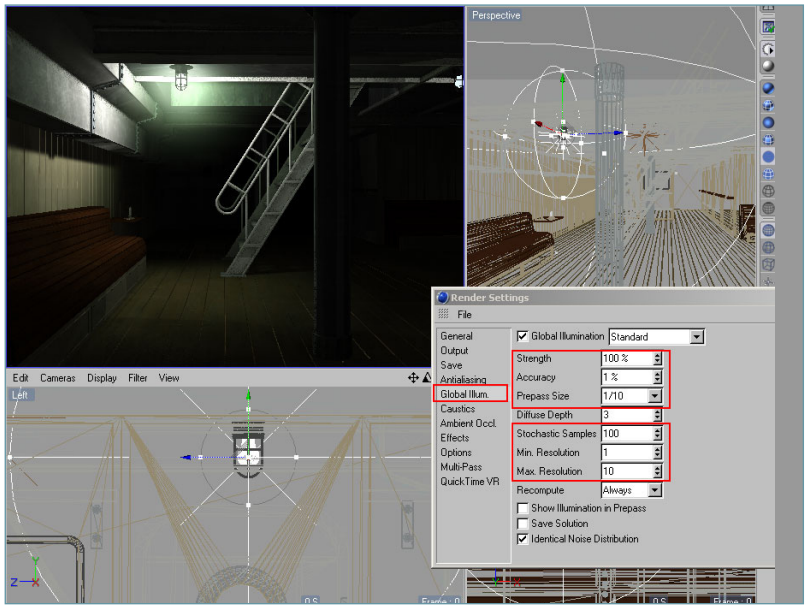


Fig 05

05. Open the Render Settings window, go into the Global Illumination control panel and decrease the parameters, as seen in Fig05. Then make a render, just to see how things are going.

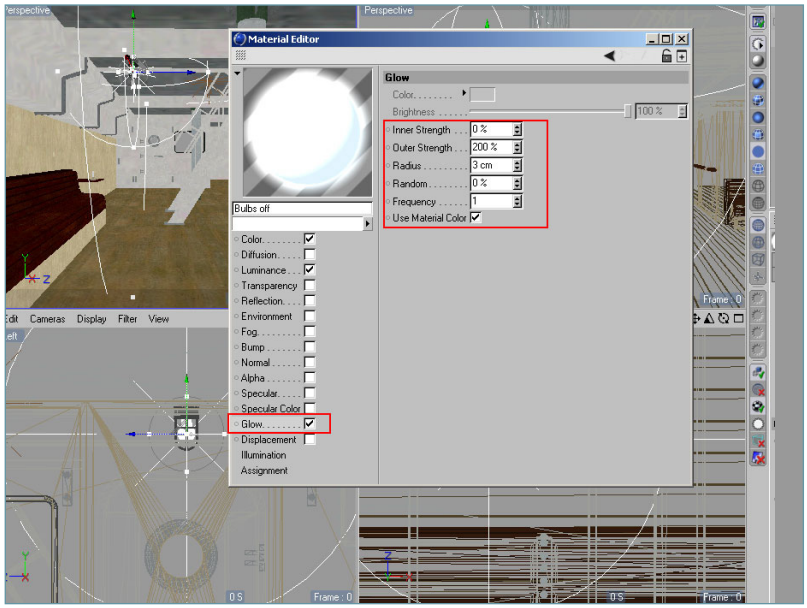
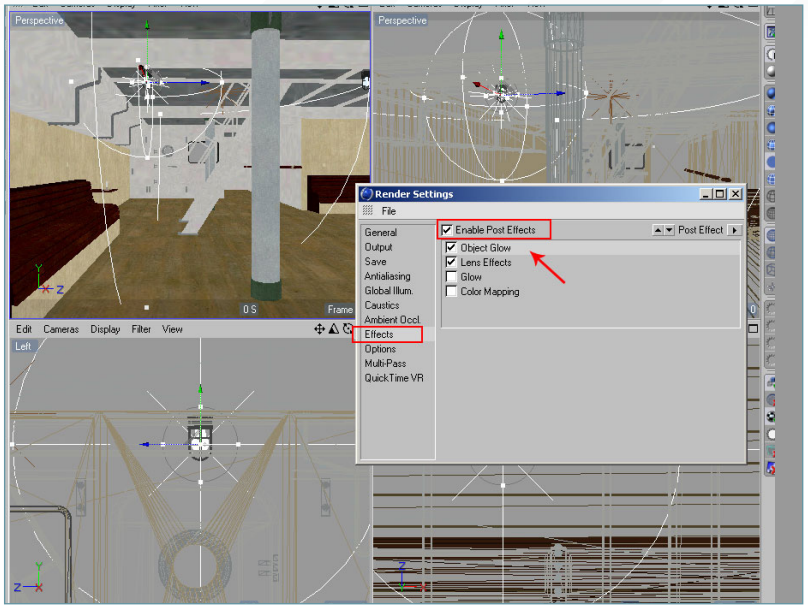


Fig 06

06. We can now add a Glow effect to the light bulb. Open the Material Editor of the “Bulbs” material from the Material Manager. Enable the Glow Channel and modify its parameters, as shown in Fig06.

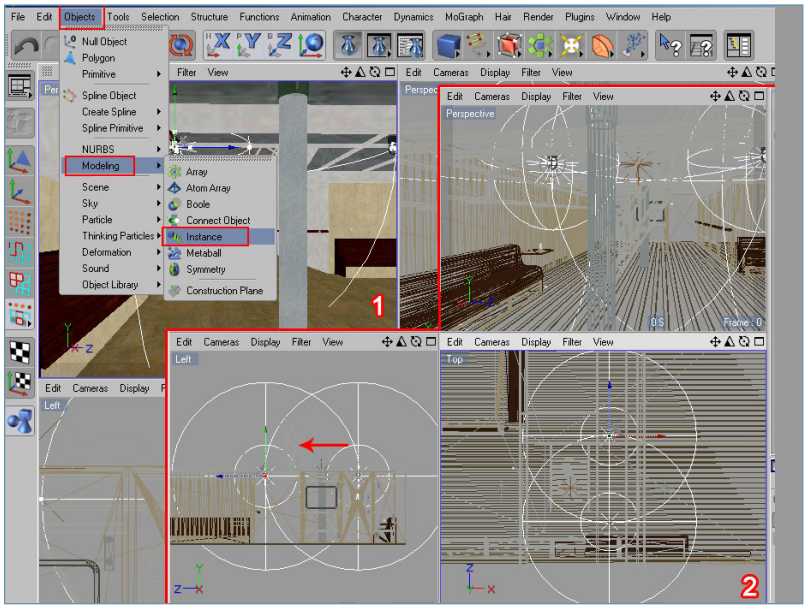
07. Open the Render Settings window and go into the Effects page. Here you must make sure that the Enable Post Effects parameter is enabled, as seen in Fig07.

Fig 07



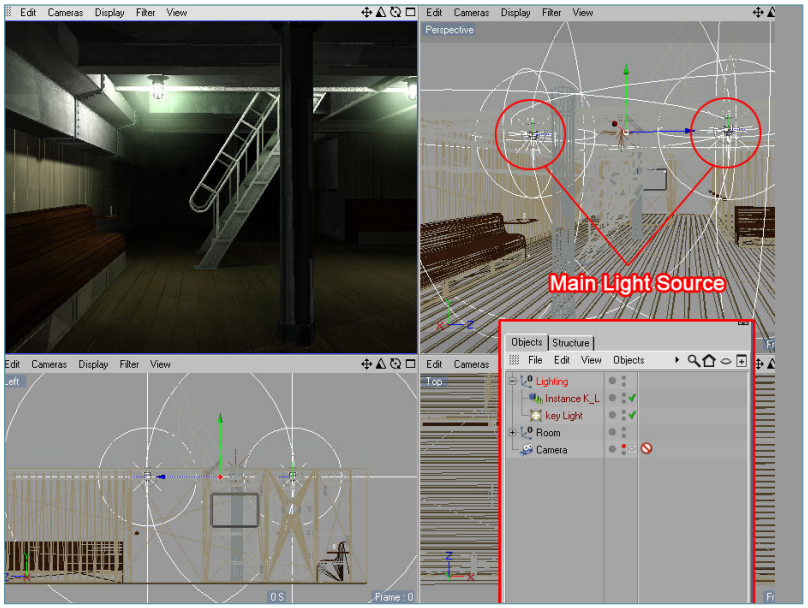

08. Now we have to add another light that simulates the second light bulb. We can either copy the Key light object and position it over the second light bulb, or we can create an “Instance” of the Key light. To create an Instance of an object, select the object in the Object Manager that you want to instance and choose Objects > Modeling > Instance (Fig08). An Instance object is a special duplicate of an object that does not have its own geometry. The Instance is a clone that will follow every change you apply to the original object. Only the position, scale and rotation are independent of the original. After you create the instance of the Key light, move it in correspondence with the second light bulb, as shown in the stage 2 of Fig08.

Fig 08




09. These two lights are the our main light source. They will simulate the electric light generated by light bulbs. Make a render to see how things are working out (Fig09). The cabin still looks dark because we are using low parameters of GI, and because we still have to add two lights that will help in better illuminating the cabin.

Fig 09



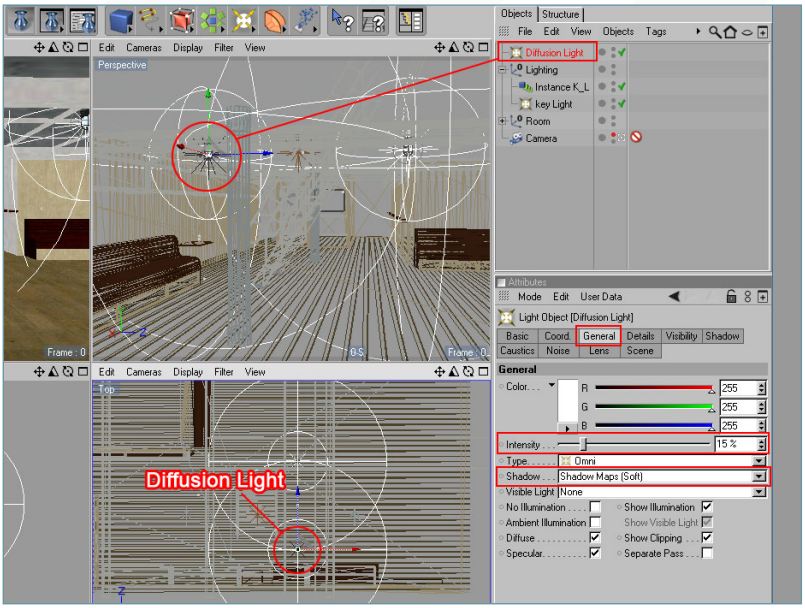



Fig 10

10. Create an Omni light and position it over the Key light, as seen in Fig10. In its General properties, decrease the Intensity to 15% and enable the Shadow Maps.

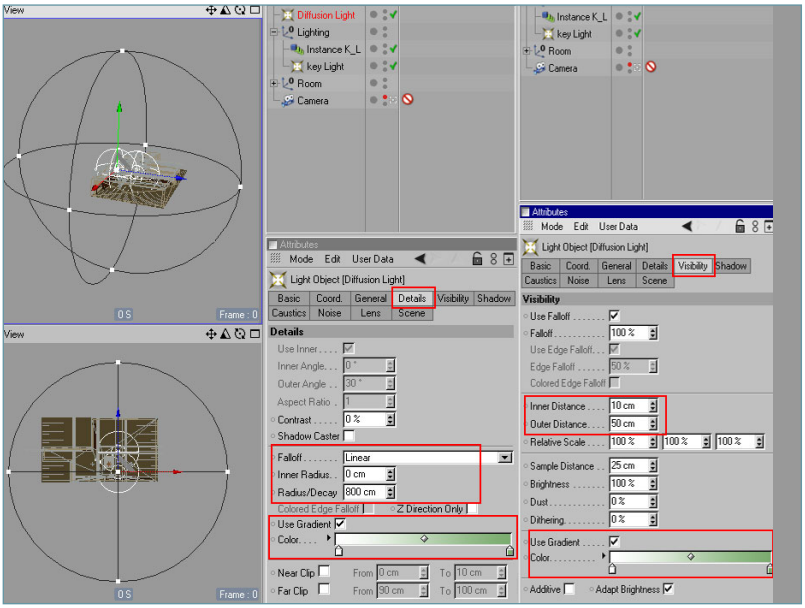


Fig 11

11. In the Details properties, enable the Linear Falloff and modify the Inner Radius and the Radius/Decay parameters, as shown in Fig11. Enable Use Gradient and change the default colours to the colours shown in Fig11. Now go into the Visibility properties where you need to change the Inner Distance to 10cm and the Outer Distance to 50cm. Then enable Use Gradient.

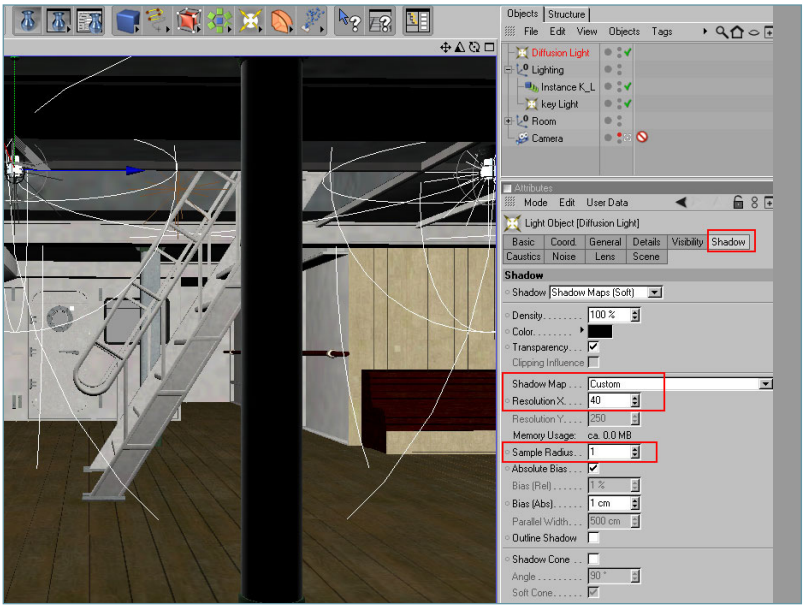
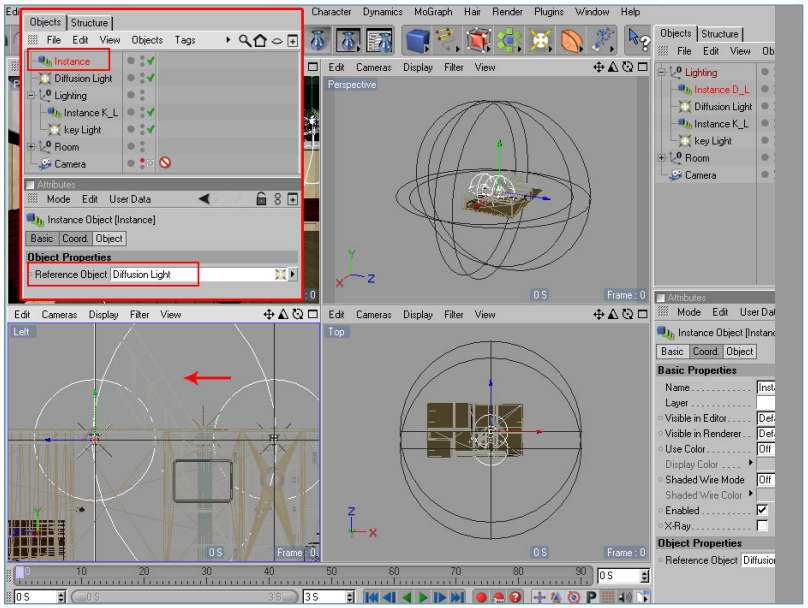


Fig 12

12. Still in the properties of Diffusion Light, go into the Shadow page and type 40 in the ResolutionX box. Decrease the Sample Radius to 1 (Fig12). This way the shadow will be slightly visible.

13. Create an Instance of Diffusion Light (Fig13). Position it in correspondance with the instance of the Key light (in correspondence with the second light bulb).

Fig 13



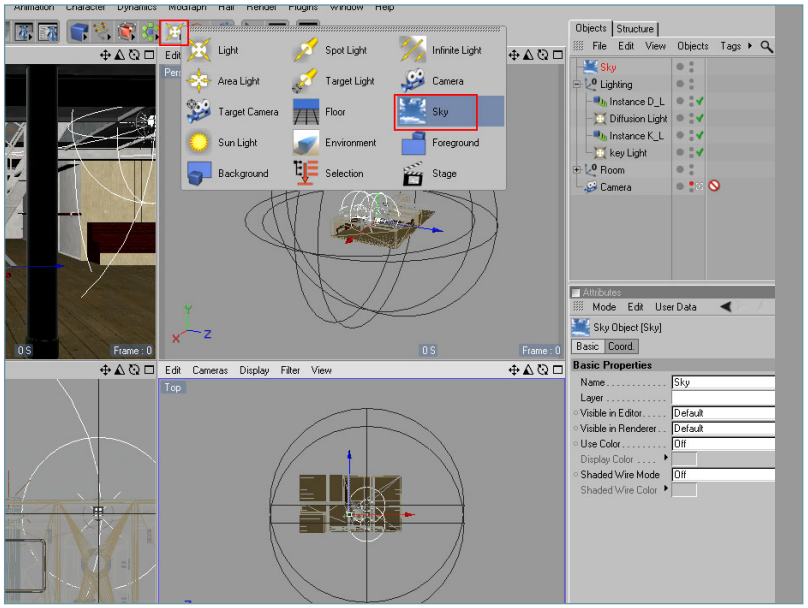
14. Make a render in the 3D view. The lighting seems to work well (Fig14).

Fig 14



15. Now add a Sky object (Fig15). The Sky is an infinitely large sphere, whose centre is the origin of the world coordinate system. We will apply a simple shader to this object.

Fig 15



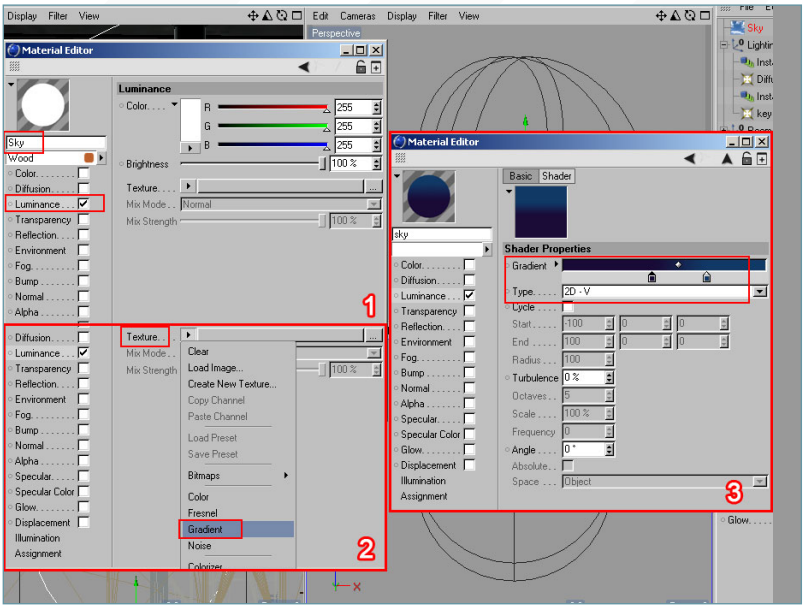



Fig 16

16. Create a new material and name it “Sky”. Enable only the Luminance channel, as shown in stage 1 of Fig16. In the Luminance channel, load a Gradient into the Texture box (stage 2). Then change the Color and the Type of the gradient as seen in stage 3 of Fig16.

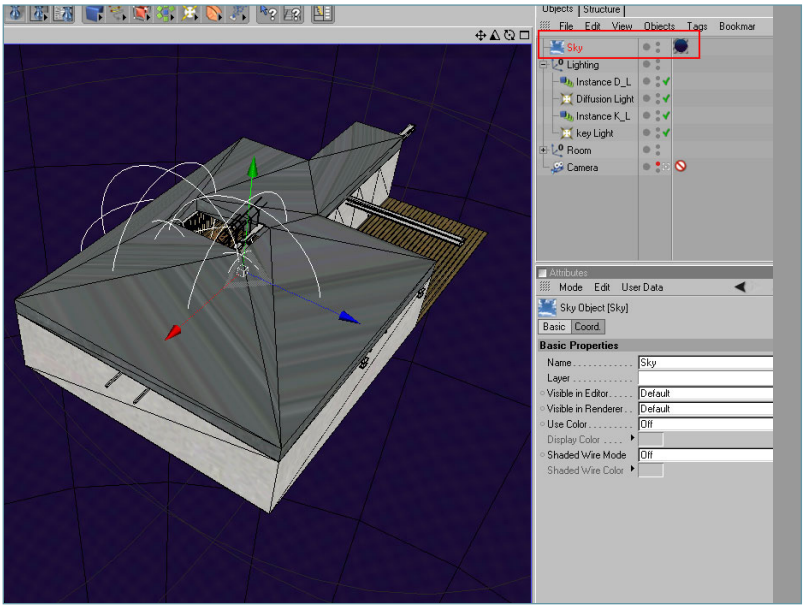



Fig 17

17. Apply the material to the Sky object (Fig17). This will give the scene a night mood.

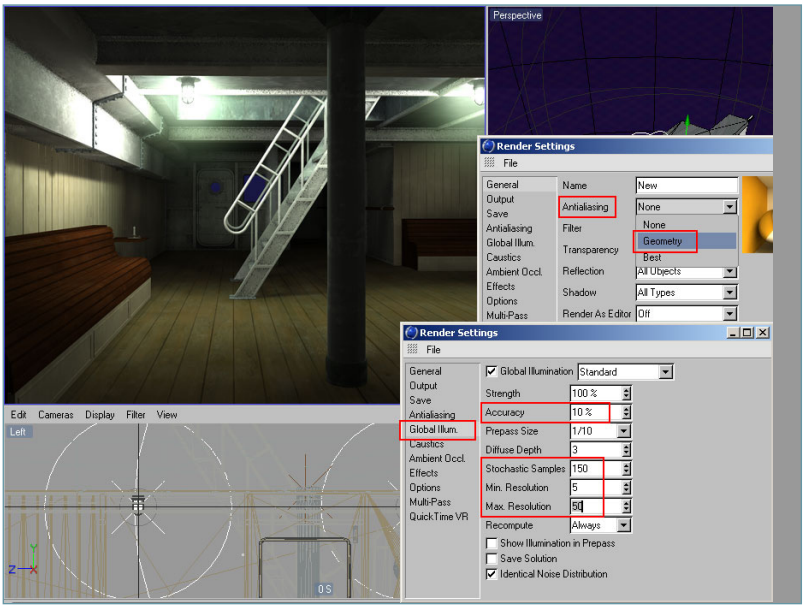



Fig 18

18. At this point we can make a render of medium quality. So, enable the Antialiasing and choose the Geometry type. In the Global Illumination page, increase the following parameters: Accuracy to 10%; Stochastic Samples to 150; Min. Resolution to 5; Max. Resolution to 50. Then make a render.

19. Well, it seems like we're done with our lighting now, so we are ready for the final render. Fig19 shows the final Antialiasing settings (left) and the final Global Illumination settings (right).

20. Fig20 shows the final render. That's all for this month! I hope you've enjoyed following this tutorial.

Fig 19

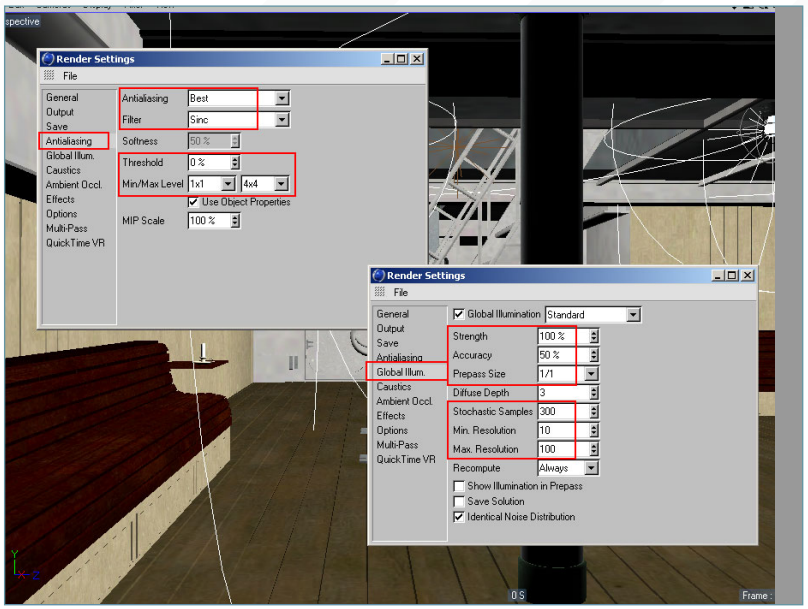



Fig 20



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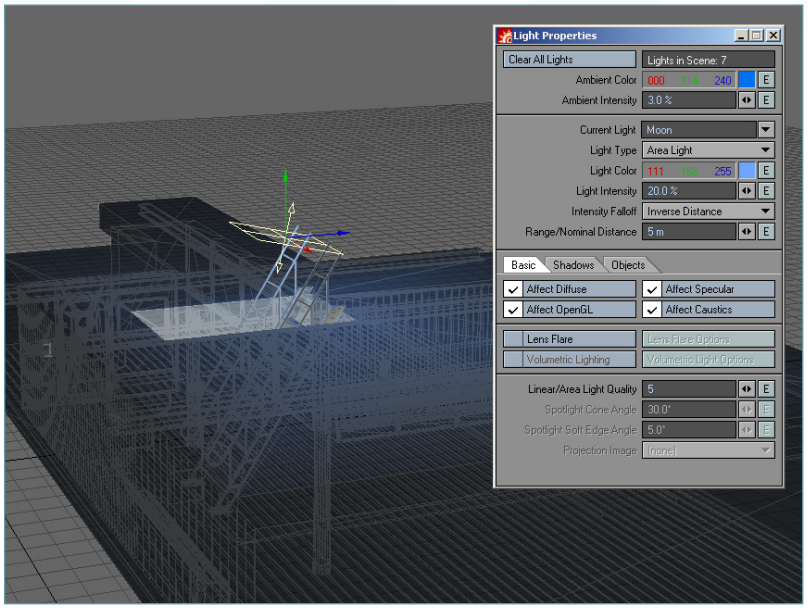
Enjoy ...

# Environmental Lighting Part 4 - Electrical

In this part of the tutorial we will start in the same way that be began the last part: by creating the light from the moon. This will give us a good contrast between the dark night that is visible outside and the electrical light that we wish to have inside.

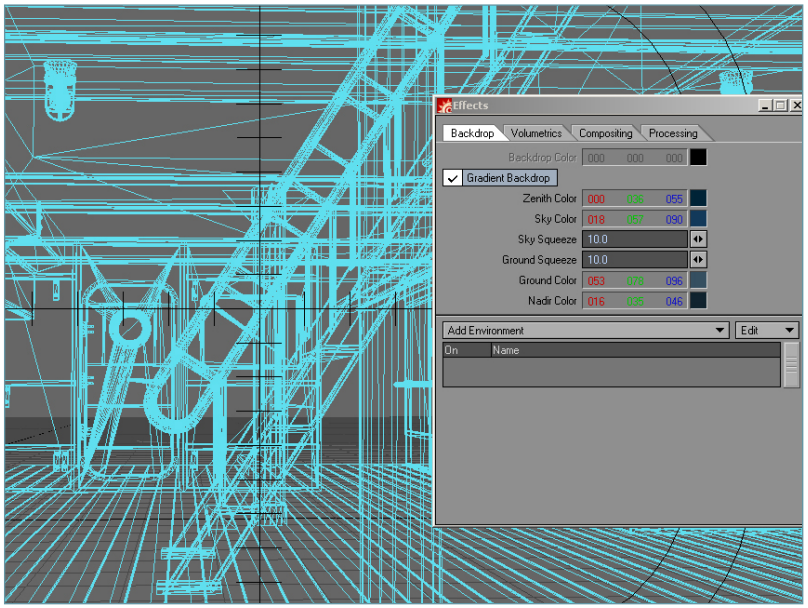
1. Start by changing the Ambient Light to a blue colour with an intensity of 3%. We now need to move the default light, which we have renamed “Moon”, just above the opening in the roof so that the light shines down the stairs. Change the light type to Area light, colour it blue, and use an intensity of 20%. Intensity Falloff should be set to Inverse Distance with a Nominal Range of 5m (Fig01).

Fig 01




2. To make the scene more believable, we need a background; this can be either an image of a night sky with some stars in it, for example, or just a simple Gradient Backdrop will also work. In the Effects window, go to the Backdrop tab and use a dark blue for the Sky Color and a brighter blue for the Ground Color. The other gradient colours can be black. Sky and Ground Squeeze should have a value of 10.0 in order to fit in nicely with the scene (Fig02).

Fig 02




3. From our first test render we can see our background with the outer light shining in. The rest of the scene is black (Fig03).

Fig 03



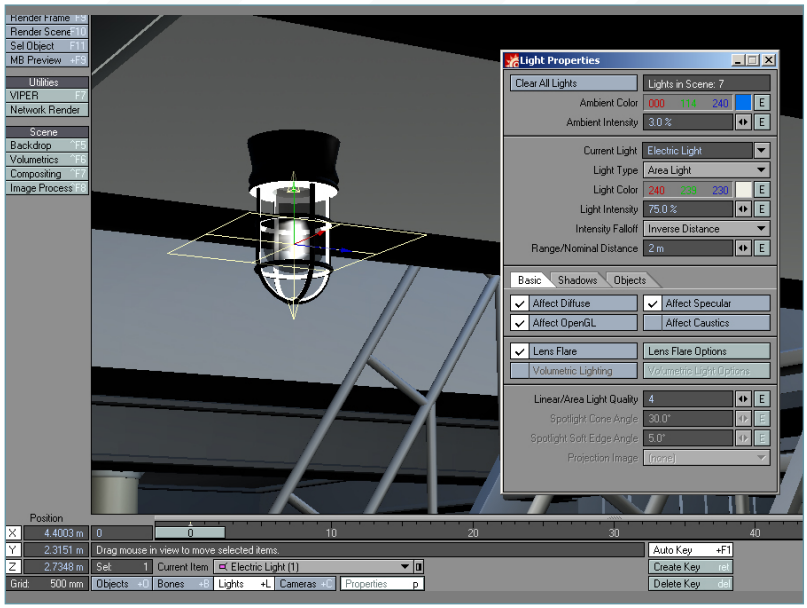



Fig 04

4. We can now add a new Area light in order to simulate the electric light. Move this light directly into the middle of the light bulb mesh. Color is a light grey and Light Intensity is 75%. Intensity Falloff is set to Inverse Distance and the Range is 2m. You can name this light “Electric Light” (Fig04).

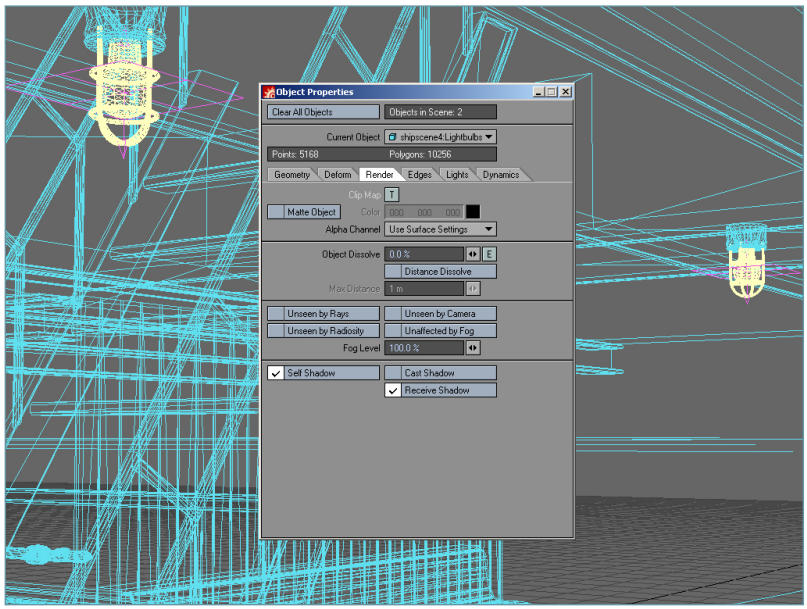



Fig 05

5. Now copy this light and move the copy in place with the second light bulb. Before we make a new test render, we need to go into the Object Properties for the separate “Light Bulb” object layer. This Object has been separated, so we are able to use different settings for it. For us, it is important to uncheck Cast Shadow. We must do this so that we don’t see the shadow of the metal frame around the light bulbs. In reality, the shadow of an object so close object would be very soft and also very big. In our scene however, it will damage the overall look if there are lots of these shadows all over the scene (Fig05).

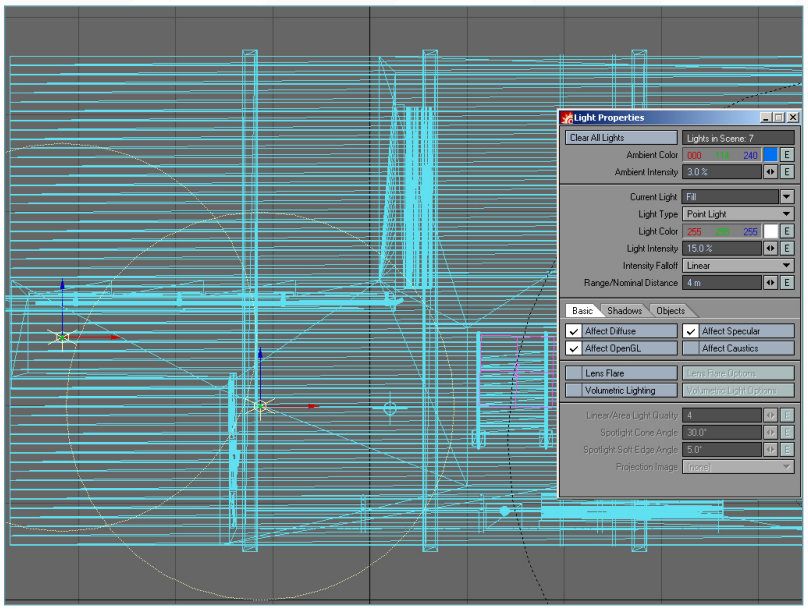


Fig 06

6. Now make a test render, again. The light is all in the foreground and around the light bulbs, but the back of the room is still completely dark (Fig06).

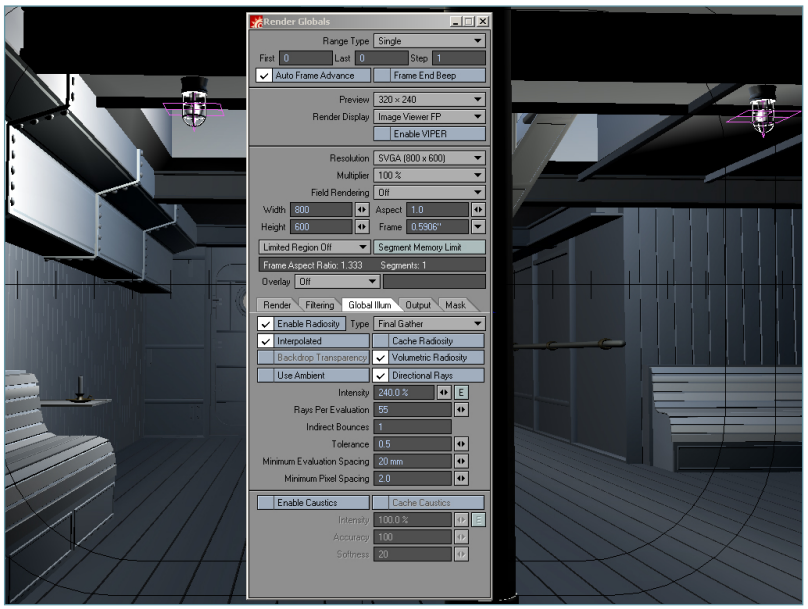
7. We can change this by adding some fill lights. Add a Point light with an Intensity of 15% and a Linear Falloff with a 4m Range. Place it just in front of the big window on the back wall. Make a clone and put it into the niche in the back. These areas are hard for the light to reach and should therefore now be a little brighter (Fig07).

Fig 07




8. In Render Globals, go to Global Illumination Tab and enable Radiosity. The Type should be set to Final Gather, and make sure you check Interpolated. Intensity is then set to 240%. Rays Per Evaluation = 55; Indirect Bounces = 1; Tolerance = 0.5; Minimum Evaluation Spacing = 20mm; Minimum Pixel Spacing = 2.0. If you need higher quality renders you would simply use a higher Rays value, lower Tolerance or Evaluation Spacing. However, the suggested settings are a good compromise between quality verses render time (Fig08).

Fig 08




9. Our test render already looks quite nice (Fig09). However, there are a few things which are not so good: the image is very bright in all areas but the light bulbs just don't look like they've been switched on, yet (Fig09).

Fig 09



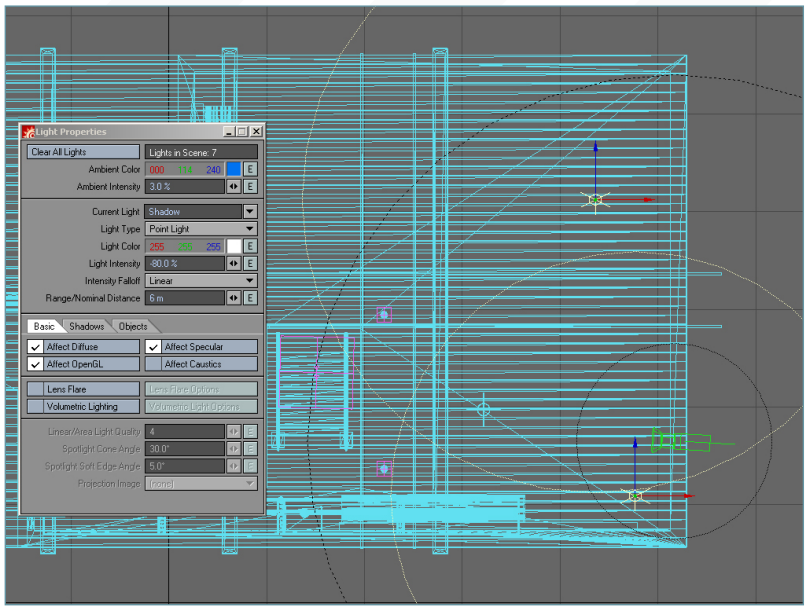



Fig 10

10. To fix this we need to add 2 Point lights with negative intensities, in order to absorb some of the light. The lights are placed in the front part of the room. This way we will create a shadow exactly where we need it. Use the following settings for these negative lights: Full white Color; Light Intensity = -80%; Intensity Falloff = Linear; Range = 6m. I named each of the lights, “Shadow” (Fig10).



Fig 11

11. As the foreground is now a little darker, our render also has more depth. Now all that is missing is the glow from the light bulbs (Fig11).

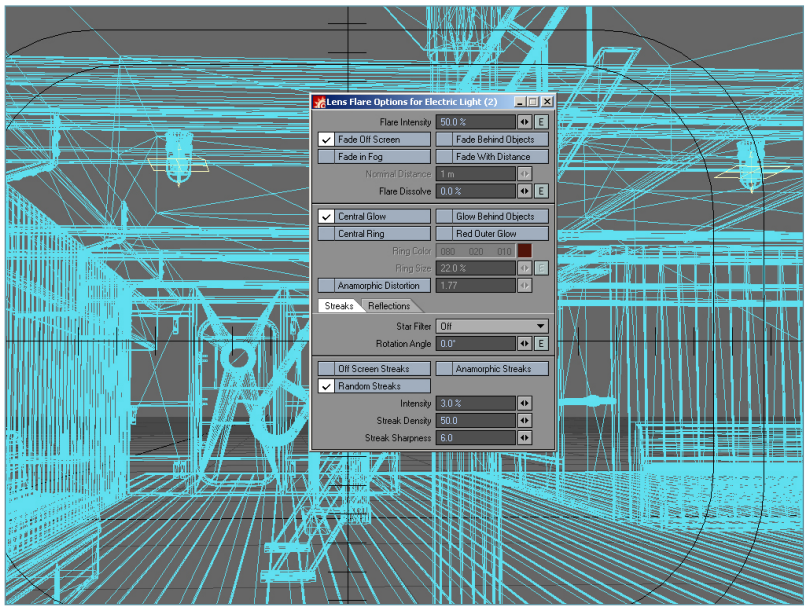
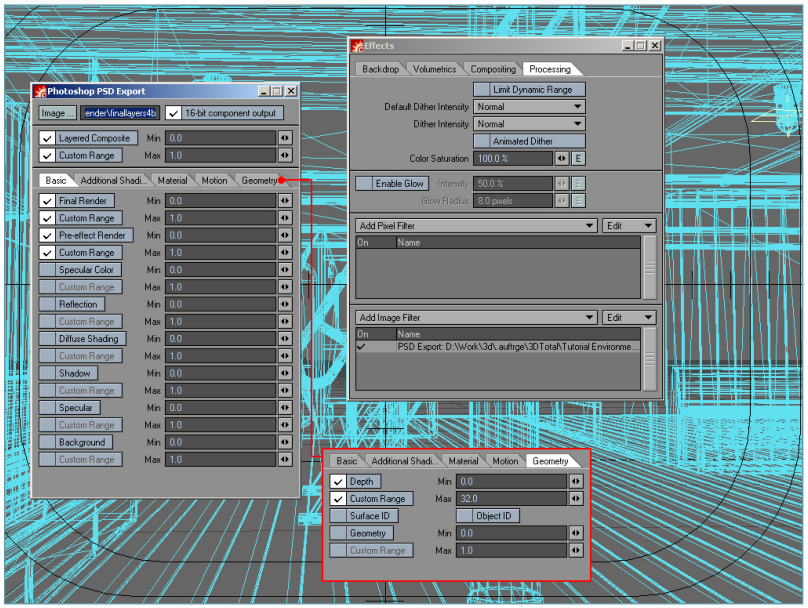



Fig 12

12. Activate Lens Flares on both copies of the “Electric Light”. Use a Flare Intensity of 50%, check Fade Off Screen, Central Glow & Random Streaks; uncheck everything else. For the Random Streaks use an Intensity of 3%, for Streak Density use 50.0, and for Streak Sharpness use 6.0. This should make nice, original looking lens flares with lots of streaks. If you would like to go for a different look, you can also try to use a star filter (Fig12).

13. In the Effects > Processing tab, add the image filter, “PSD Export” and double-click for its properties. Choose a file path and check Layered Composite. Also check the Depth layer in the Geometry tab. This plug-in creates a PSD file which you can later edit in Photoshop. Most image aspects like the lens flares, light and shadows are saved as separate layers, so this plug-in gives you full control over your rendered image. Be sure to render via the Render Scene option, with image range set to 0, so that you just render one image. Using F9, the image might not be saved automatically (Fig13).

Fig 13



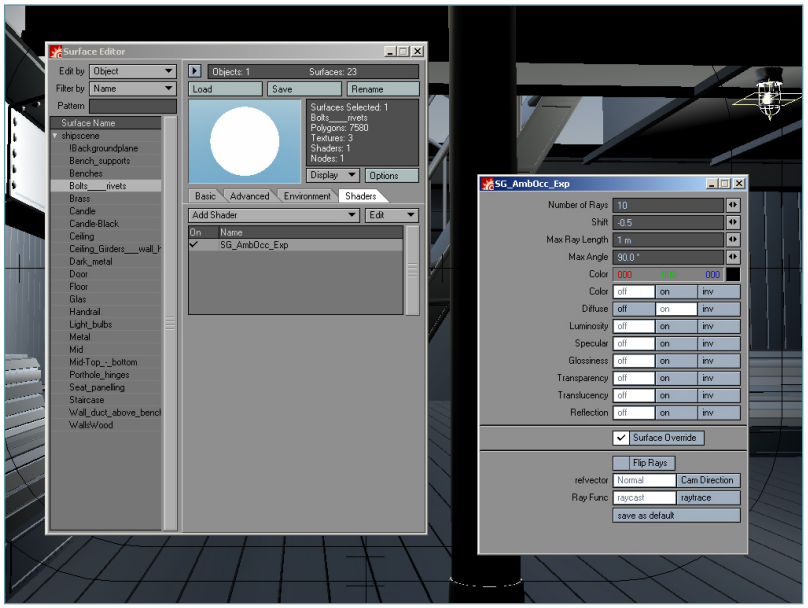

14. Have a look at the finished render (Fig14). I think it looks very good. Before we can do some post work on it though, we are going to render a second pass of the image: the Ambient Occlusion pass. This will render just the parts of the image that are hard to reach for light, such as the gaps between the wooden planks (Fig14).

Fig 14



15. In the Material Editor, add the shader “SG_AmbOcc_Exp” to all your surfaces. You can leave all settings to the default value. It’s important that Surface Override is checked, so that it’s completely white. Make sure to disable Radiosity for rendering and use the same resolution for rendering as for your final render (Fig 15). **Note:** SG_AmbOcc_Exp is a free Ambient Occlusion plug-in that you can find and download via the great **www.flay.com** database.

Fig 15



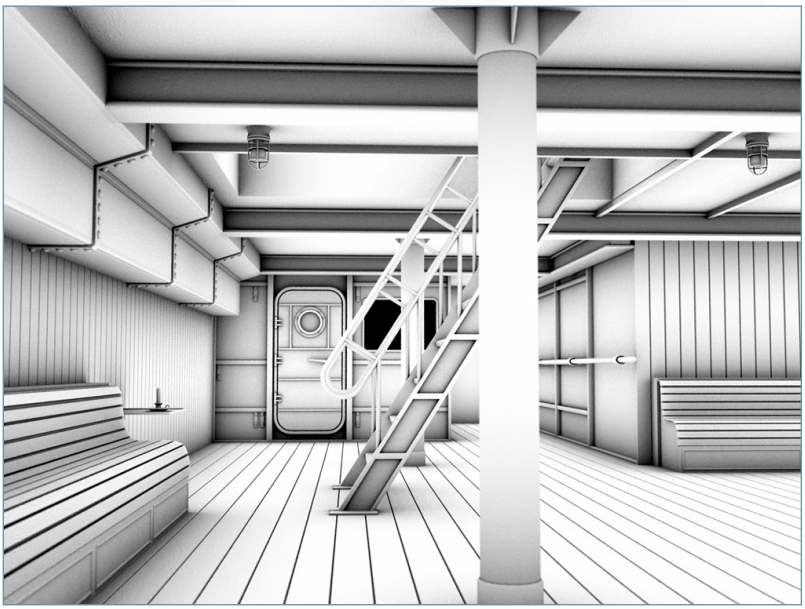


Fig 16

16. Have a look at the rendered image (Fig16). Only the corners, edges and hard to reach areas are visible, whilst the rest of the image is white. Save the image file as “ao.psd” (Fig16).




Fig 17

17. In Photoshop, open up the layered PSD file of your render. Also open the ao.psd file, then select everything and copy it. In the layered render, paste the ambient occlusion pass as a new layer. Make sure the layer is below the lens flare layer. Change the Blending Mode to Multiply and the Opacity to 80%. It looks much better now, don’t you think? (Fig17)

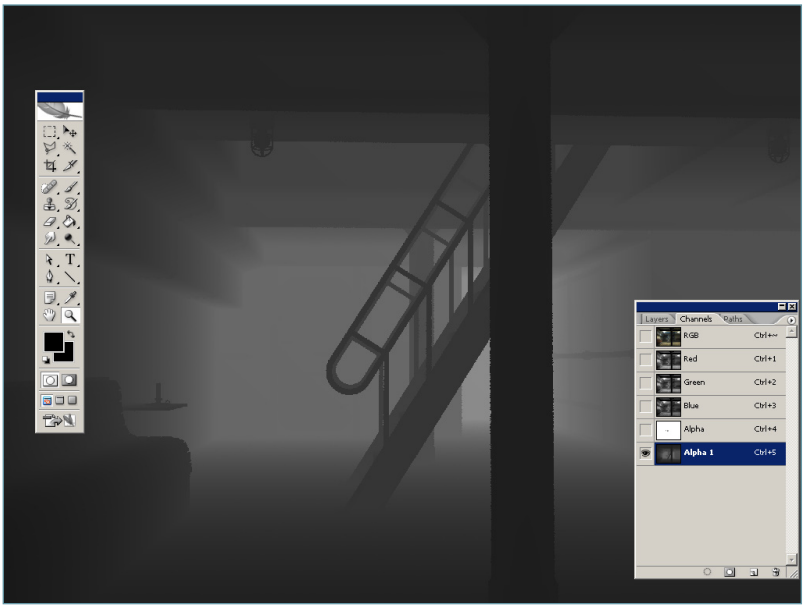
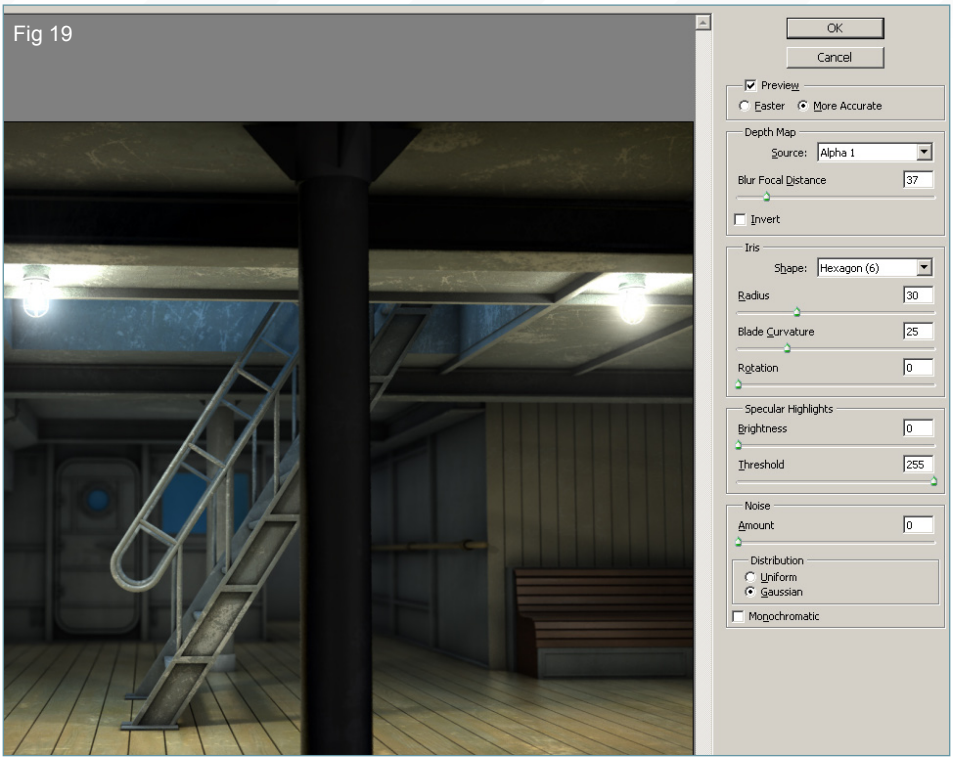



Fig 18

18. If you like, you can now add some Depth of Field to the rendered image. Simply select and copy the “Depth” layer, go to Channels, and then create a new alpha. You can then simply paste it (Fig18).

19. When you're done with all the image manipulation, merge all layers. Go to Filter > Blur > Lens Blur. Choose the alpha you created (Alpha 1) and click into the image to set the point that should be in focus. I used the ladder to be sharp, so the background becomes slightly blurry (Fig19). Remember, by using layers you can also make certain effects stronger, or more subtle. This can be done by changing the opacity or by image manipulation for each separate layer. For the final render, for instance, I duplicated the lens flare layer. By adjusting the levels for this layer only, I could then make the flares and streaks more intense. I think this image resembles electric lighting very well, so I can now call this image "done".

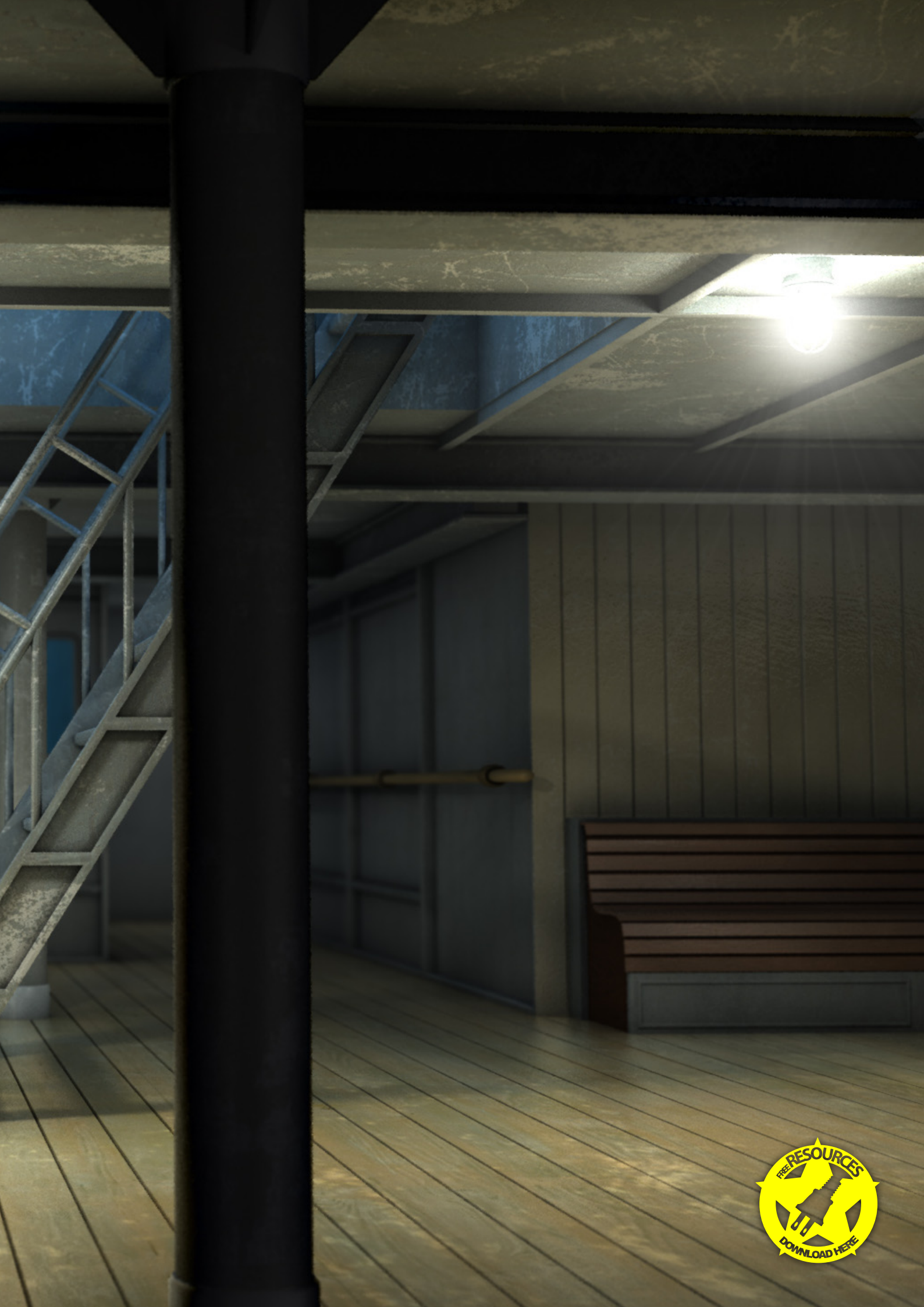





I hope you've enjoyed this tutorial. If you have any questions or suggestions, please contact me.

Originally designed & modelled by:
RICHARD TILBURY
Tutorial by:
ROMAN 'DOUGH' KESSLER
For more from this artist visit:
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# 3D environment lighting

'3D Environment Lighting' is our new 6-month tutorial series. Over the course of the next six months, this series will be detailing techniques on lighting an environment under a number of different conditions. Each month we will cover a step-by-step guide to setting up lights, aimed at portraying the scene in a specific manner. The various tutorials will be tailored to specific software packages and each will aim to show a comprehensive and effective way of lighting an interior of a ship that includes both natural and artificial light. These will include a sunny afternoon, sunset, moonlight, electric light, candle light, and finally a submerged submarine light. The schedule is as follows:

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## Artificial Interior Lighting Electrical

Issue 027 November 2007

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Issue 028 December 2007

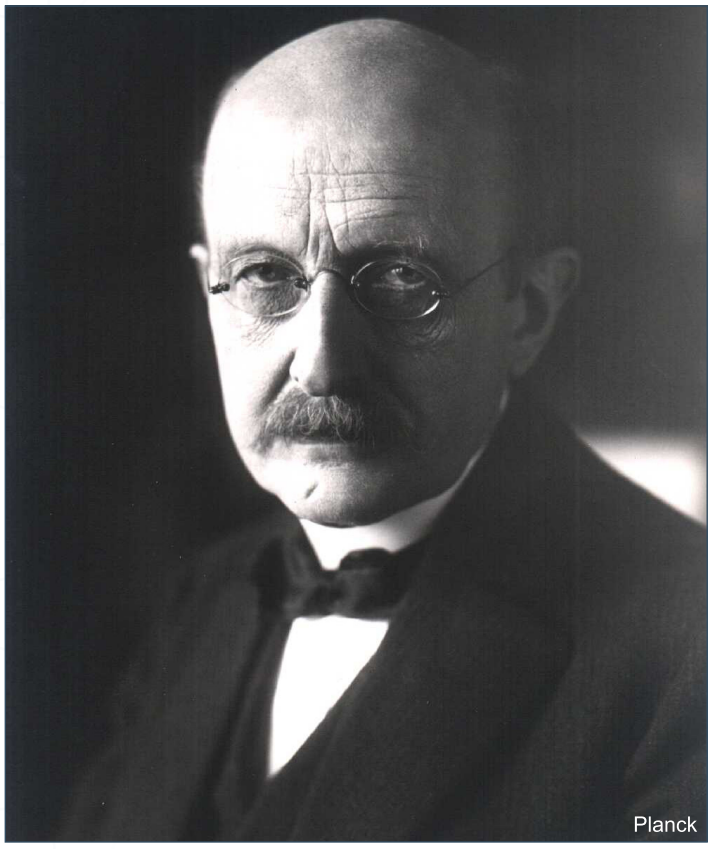
## Artificial Exterior Lighting Underwater

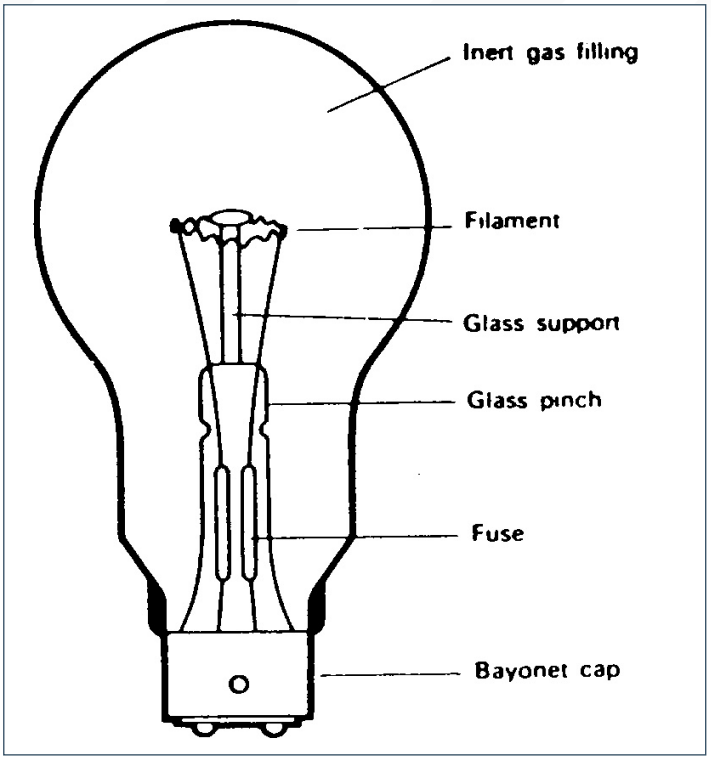
Enjoy...

# Environmental Lighting Part 4 - Electrical

Hello and welcome aboard! This time, following on from our last tutorial on natural moonlight, we'll be discussing a very "CGI-traditional" style of illumination: electrical lighting. Although this kind of light is considered artificial, we will learn later on that it has a very natural background (at least as long as we stay with a tungsten light, which we propose to do so in this tutorial).

So why "CGI-traditional", you ask? Well, ever since there was CGI (Computer Generated Imaging), tungsten bulbs have been very easy to simulate, for mathematical reasons. The classic tungsten bulb has a relatively limited area of light emission, which in the 3D/simulation world can be simplified down to a infinitely small point: the classic point light (as a side note, its little brother, the spot light, is nothing but a point light but with more sophisticated features). In the history of CGI, this infinitely small point made it possible to render 3D images quickly and effectively, due to logic reasoning. In order to simulate a light source, we basically need three points for the maths; i.e. the position of the eye of the observer, the point on the surface that's being lit (called the "intersection point"), and the position of the light source. All of these together mathematically make out the rendering, and since an infinitely small point is obviously the most simple element in 3D space, it can be computed with very little expense in this context. Even more importantly, it becomes "noise-free",


Planck



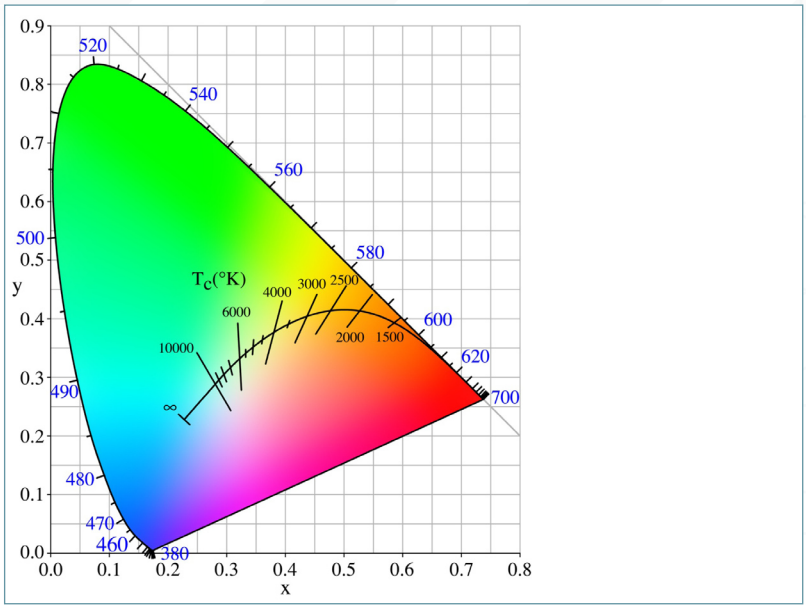

since the point is strictly determined. Back in the times when computers weren't as "high-clocked" as they are today, this was crucial, and point light based lighting was mandatory, along with closely related techniques such as spotlights and directional lights (which use an infinitely far away point, instead). So for CGI, the Point light is pretty much as important as Edison's light bulb is for real life. Computer light sources have evolved since then, however; just as the real light bulb has. For both, the principles have also stayed the same. And still, the most believable deployment of a point light is at the simulation of a tungsten bulb.

Now with the history covered, let's have a closer look at how tungsten bulbs actually work, and why they look as they do. This is, as always, the essential starting point when trying to simulate a specific subject. The operation of a usual incandescent bulb is quite simple: an electric current is passed through a tungsten (also called wolfram) filament, which is enclosed by a glass bulb that contains a low pressure inert gas, to avoid oxidation of the electrically heated filament. Depending on the type of the filament, the operation heat is typically between 2000 and 3300 degree Kelvin (around 3140 to 5480 degree Fahrenheit, or 1727 to 3027 degree Celsius). This thermal increase induces radiation (also, but not only) in the human visible light spectrum, in the form of a so-called "black body". The interesting thing about this black body (which actually is an idealised physical model of a radiator/light emitting body) is that its emitted spectrum, i.e. the colour, can be estimated by solely knowing the (absolute) temperature of the black body, according to Planck's Law. On the contrary, one application of this is in astrophysics, where scientists can measure the temperature of a star by analysing its spectrum. And furthermore, this way the movement of stars and galaxies

can be determined, if this estimated spectrum is shifted either towards blue (getting closer) or red (moving away), due to the electromagnetic equivalent of the sonic Doppler effect, called “redshift” or the “Hubble effect”.

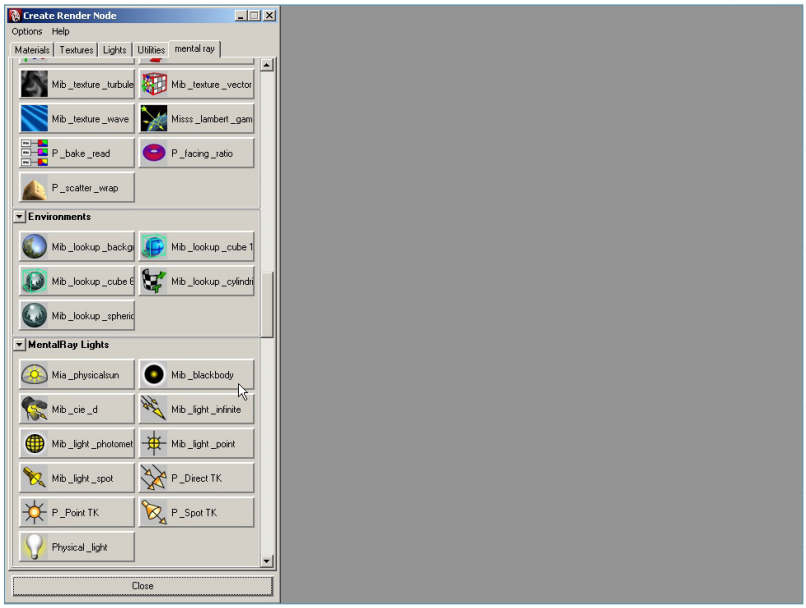
Well, this all means we have (at least in theory) a strictly defined spectrum, or colour in our case, for a glowing tungsten bulb. This colour lies on the so-called “Planckian locus” (Fig01); a coordinate in a particular colour space, which ranges (for our needs) from the visible red, over white, to blue. There are several “black-body-Kelvin-temperature-to-colour” converters on the Internet, but fortunately there is a standard tool that ships with Mental Ray, which makes our life a little easier!

Fig 01



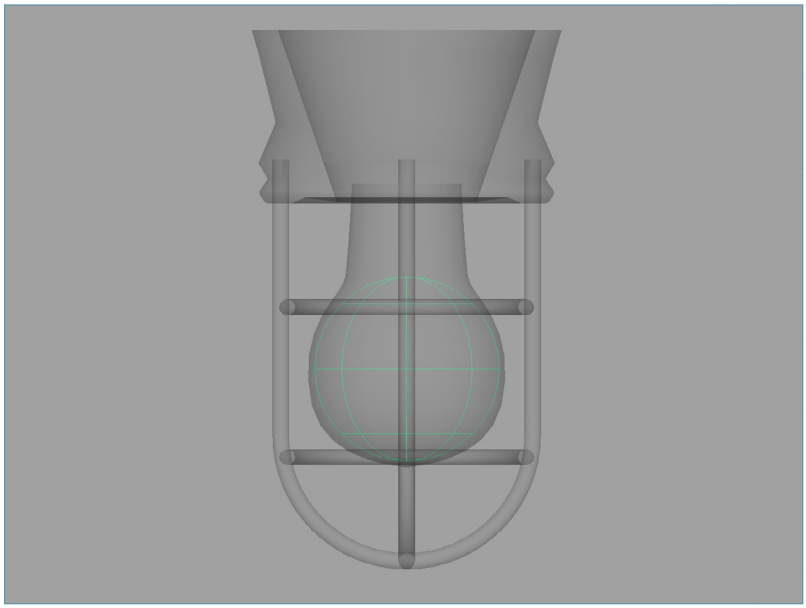

It’s called, guess what, “Mib_blackbody”, and can be found in Maya under the MentalRay Lights tab in the Hypershade menu (Fig02). This utility outputs the desired colour, according to the temperature we feed it.

Fig 02




So let’s model the actual light. To deliberately break tradition, I decided to use a spherical Area light (instead of the good ol’ Point light) which I placed close to the centre of the actual bulb’s geometry, so that it’s encompassed by it (Fig03). Obviously, if we rendered it this way, we would face trouble due to the occlusion caused by the bulb’s geometry.

Fig 03



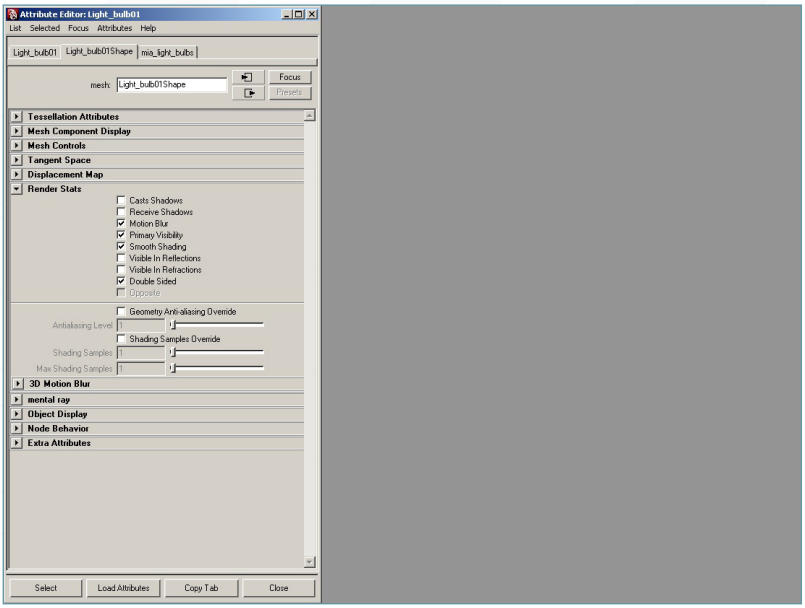



Fig 04

There are several ways to get around this. We can either adjust the bulb's glass shader so that it handles the transparency (although we'll have to increase the ray depths accordingly). Or, and this a little smarter in this case, because we won't have to mess with the ray depths, we can simply exclude the bulb from shadow and reflection/refraction tracing by setting some flags in the object's Shape node (Fig04). Since the bulb is incandescent anyway, we can neglect its shadow.

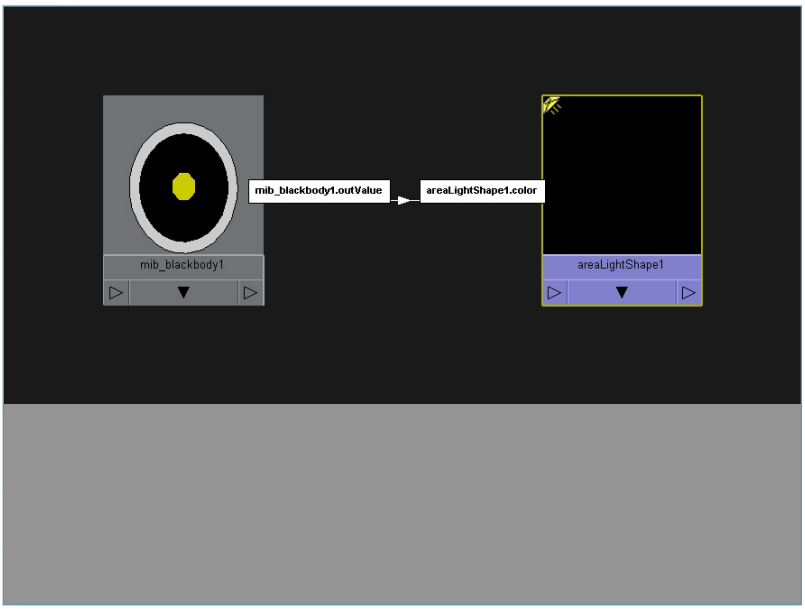



Fig 05

To give our light the desired colour, I simply create the mib_blackbody node and connect it to the Area light's colour slot (Fig05).

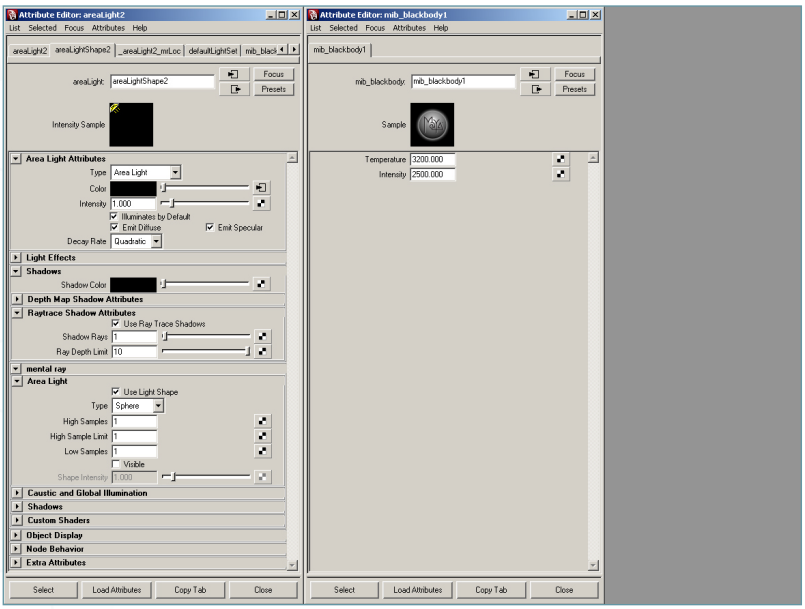
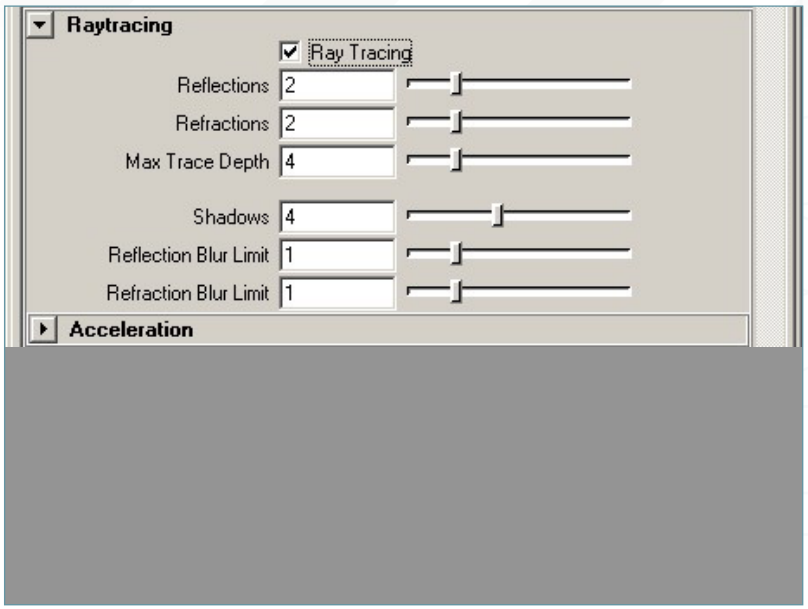



Fig 06

I also set its decay rate to Quadratic, which is very important in order to give it a natural falloff and to obey physical laws. The intensity is left at 1.0; I completely hand this over to the mib_blackbody, where I also set a reasonable temperature for our tungsten filament (something between 2000 and 3300 - I decided for 3000 degree Kelvin) (Fig06). I repeat all these steps for the second bulb, except that I use the same mib_blackbody node for its colour, just to speed up the workflow a little as we can assume that both bulbs are of the same type.

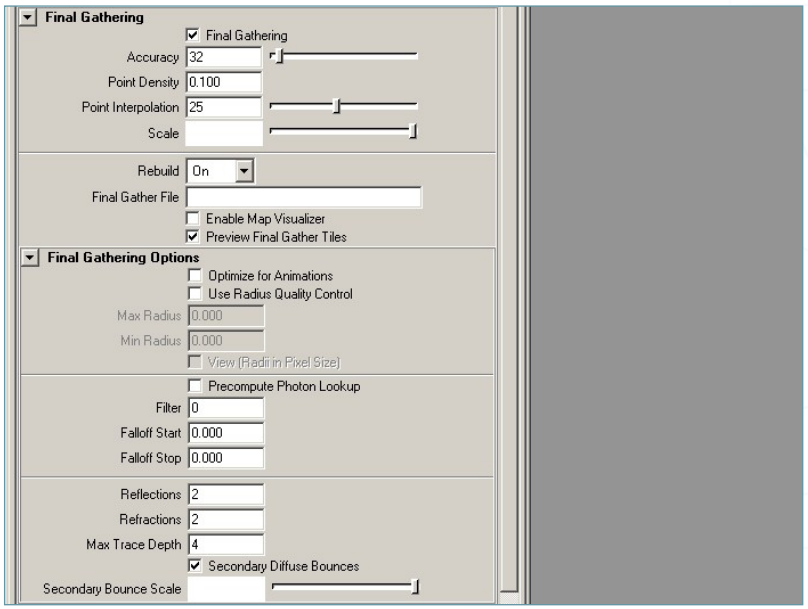
We're pretty much ready to render now. Before we push the button though, let's adjust the Render Globals to something more reasonable. The Ray Tracing depths for example are not quite what we need, although they only need changing slightly (Fig07).

Fig 07



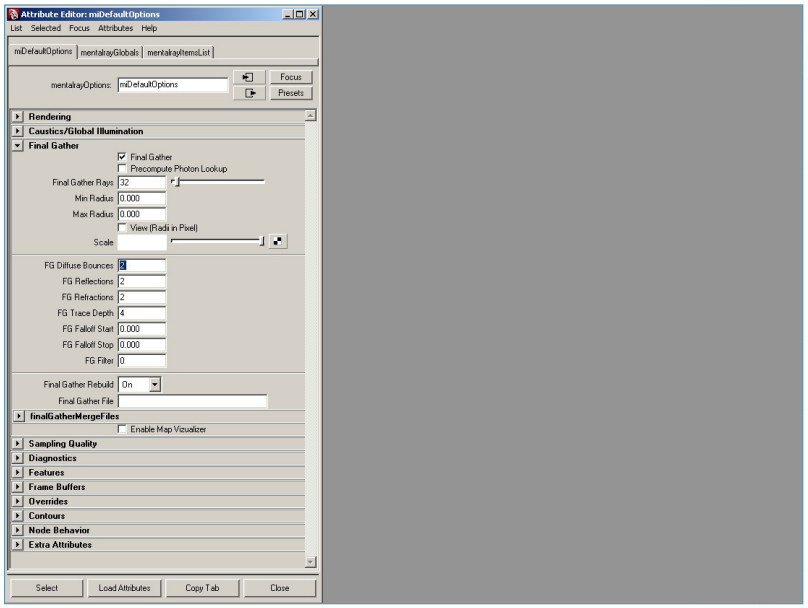

I'm also switching on Final Gathering for the indirect light contribution. I set the Accuracy, Point Density and Trace Depths to a "good-to-play-with" value; we can change these for the final render of course, later on (Fig08).

Fig 08




Because the FG Diffuse Bounces setting has a little shortcoming in Maya 8.5, I set them in the actual controlling node, which is called "miDefaultOptions" (type "select miDefaultOptions", without the quote marks, into the MEL command line to bring it up in the attribute editor) (Fig09).

Fig 09



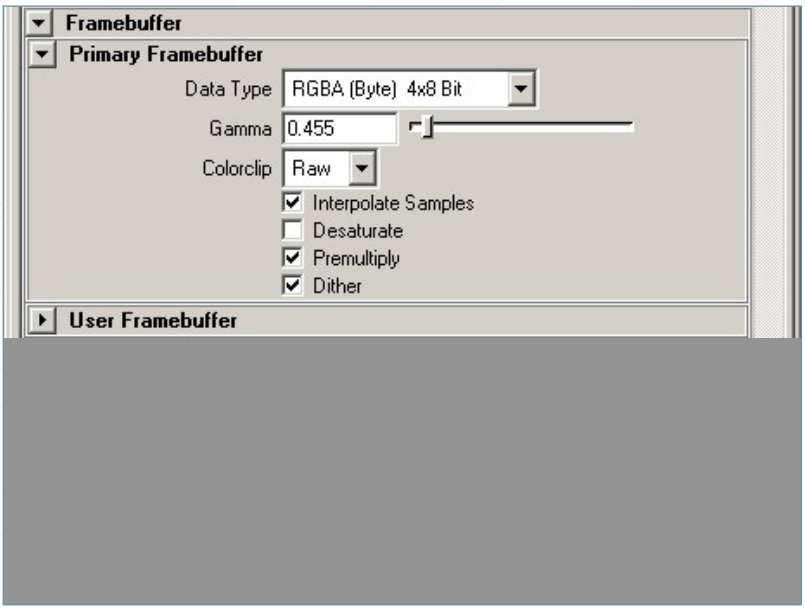



Fig 10

Lastly, but most importantly, we have to get into the right colour space, which is sRGB - the commonly used space for things like photographs. Although we cannot precisely apply this colour profile right away (at least not easily in Mental Ray for Maya 8.5), we simply apply a so-called “gamma correction curve” to our image, with a value of value 2.2, which is usually sufficient. This implies some caution; because the textures we usually use are already in sRGB, hence they are gamma corrected, we need to “un-gamma” them before we correct the whole image again. This may seem awkward and unnecessary, but it makes total sense for one reason: if we want the (gamma corrected/sRGB) texture to look like what we are used to it looking like, we need to remove the gamma correction first, before we re-apply it to the whole image. This may seem odd, but it will make our picture look much more natural. Thankfully, Mental Ray has this “remove-texture-gamma-and-re-apply-it” thing built in already, so we simply set the desired gamma correction value in the Framebuffer > Primary Framebuffer tab of the Render Globals (Fig10). However, Mental Ray wants us to actually specify the inverted function, which is 1/2.2, equal to 0.455 in our case. For more information on the gamma issue, I encourage you to read the ‘Note on Colour Space’ in the very first part of this tutorial series.

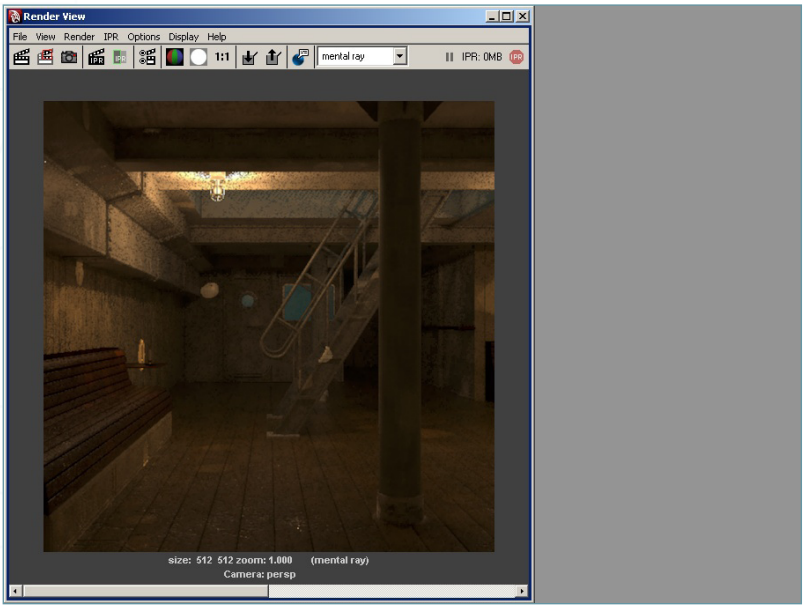



Fig 11

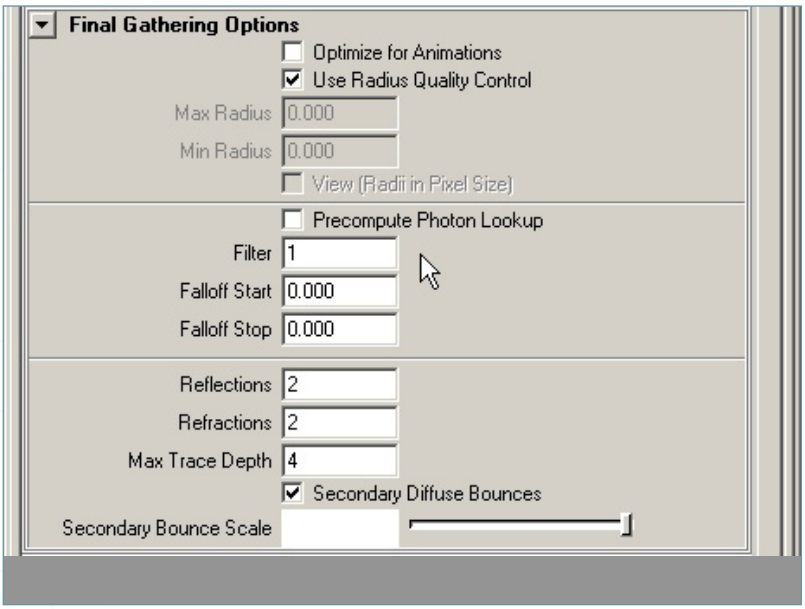


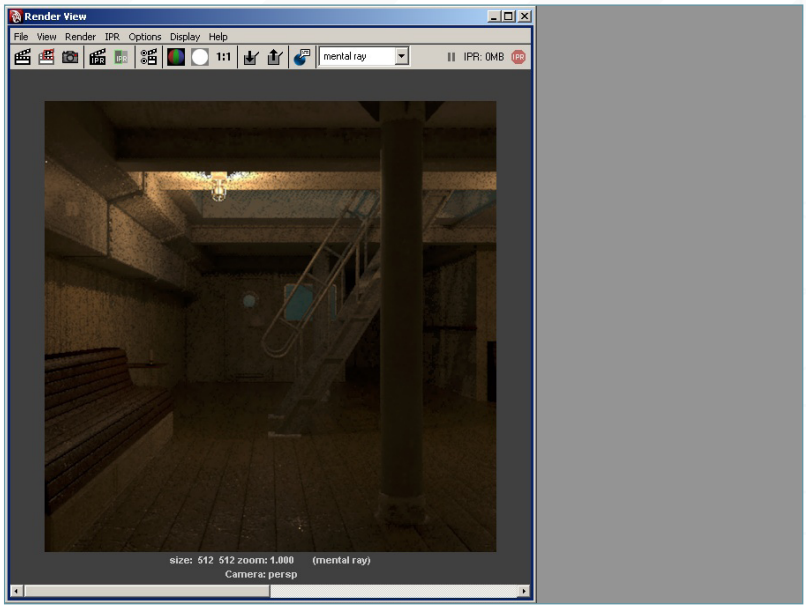

Fig 12

Well, here’s our first test render with the settings above (Fig11).

Strange things are happening, I know. The reason for this is the very close proximity of geometry to our Area light. The Final Gathering usually goes nuts on this! There’s an easy solution: we simply set the Final Gathering filter to greater than 0. I decided to use 1 as this usually does a good enough job (Fig12). Usually, it is desirable to completely avoid this filter (i.e. leave it at 0), because it introduces some strange bias in certain situations; for example, if we had lit our scene completely by HDRIs. So use it wisely, or only if you are forced to, like in our case. If you are still encountering

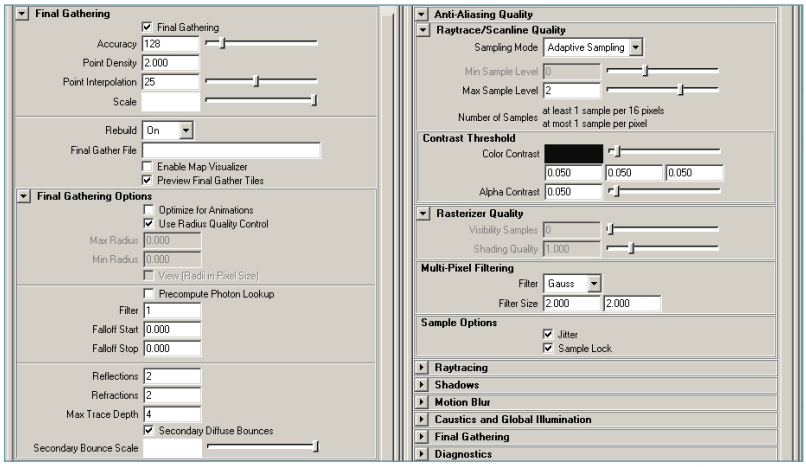
artifacts, try excluding the lamp guard and base from the reflection/refraction tracing, as well. Let's see if it helped (Fig13) ... Yep, that looks much better now! I'm preparing for the final render now, by upping the general anti aliasing quality.

Fig 13



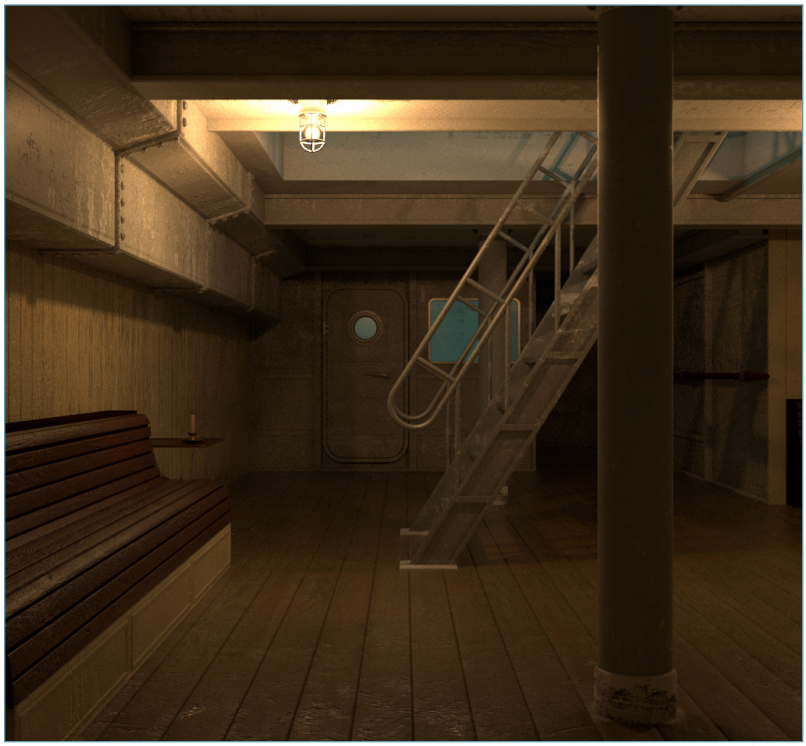

The Final Gathering needs increasing, too (Fig14).

Fig 14




And there we go (Fig15).

Fig 15



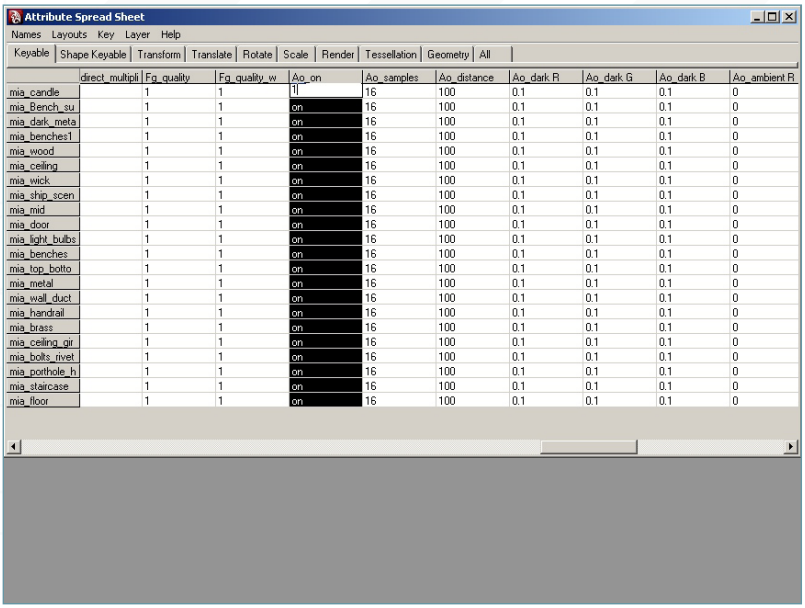



Fig 16

The last thing I added was the mia_material's built-in detail ambient occlusion, by selecting all the mia_materials and changing the Ao_on attribute to 1 (on) in the attribute spread sheet (Fig16). This reveals small details without hammering the well-known - and usually way too strong - "ambient occlusion corner darkness" onto our image.

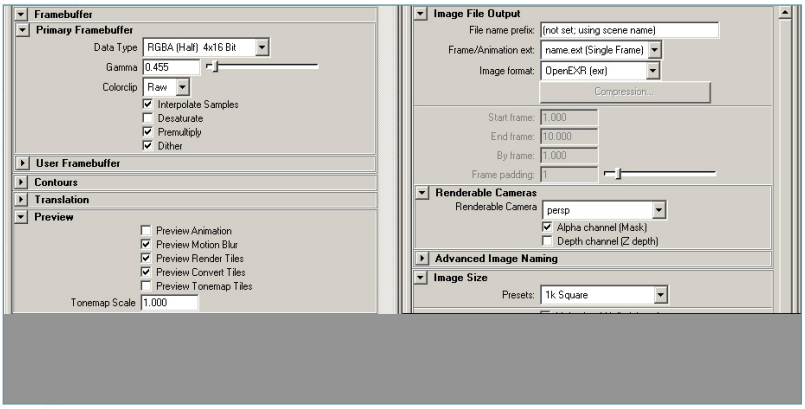



Fig 17

Also, I decided to render to a more reliable, fancy, super-duper 32bit framebuffer - simply because everyone does! Seriously though, for stills it's better of course to render to a floating point format. After all this, we'll achieve a much more peaceful sleep whilst the renderer works overnight. However, for efficiency, I decided on a 16bit half framebuffer, which is still a floating point format but uses less space and bandwith. To use this, the only possible file format for now is OpenEXR, which is not a bad thing since OpenEXR is quite fancy, really (Fig17).



Fig 18

After touching up the contrast and some of the colours here and there, I came up with my final interpretation (Fig18).

I hope you've enjoyed following this little tutorial about electrical light, and I hope you'll stay with us for the next tutorial part, on candle light!

Originally designed & modelled by:
RICHARD TILBURY

Tutorial by:
FLORIAN WILDE
For more from this artist, contact them:
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# 3D environment lighting

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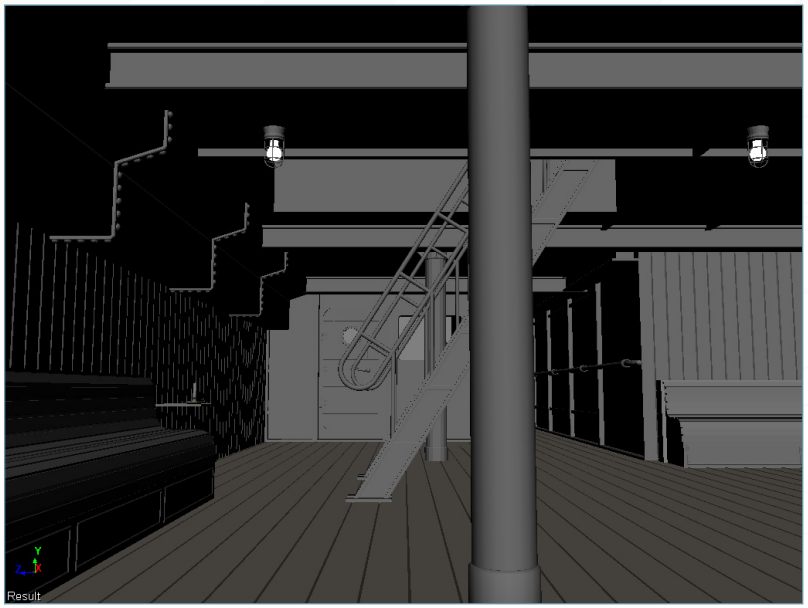
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# Environmental Lighting Part 4 - Electrical

This month we'll see how to create an artificial lighting situation for our ship cabin scene. As usual, we'll use Softimage|XSI (version 5.11 and above) and Mental Ray. Before we can start, we need a little information about how artificial light works. I suggest you do a quick search in Google for reference images; you'll notice that large spaces are lit by a fair number of light bulbs, which usually give general lighting a strong, greenish component.

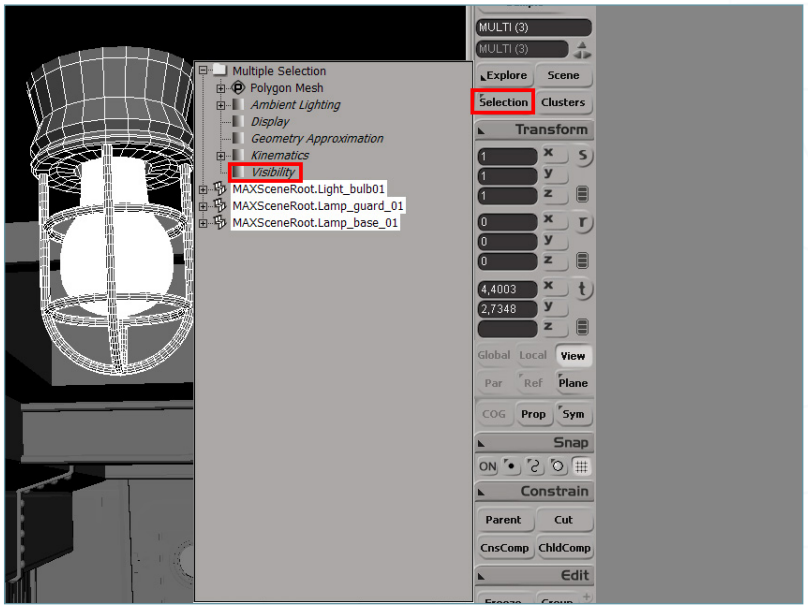
1. Open the ShipCabin_Part4_ARTIFICIAL_Start.scn scene file included with this tutorial. (download can be found at the end of this tutorial; click on the Free Resources logo) (Fig01).

Fig 01



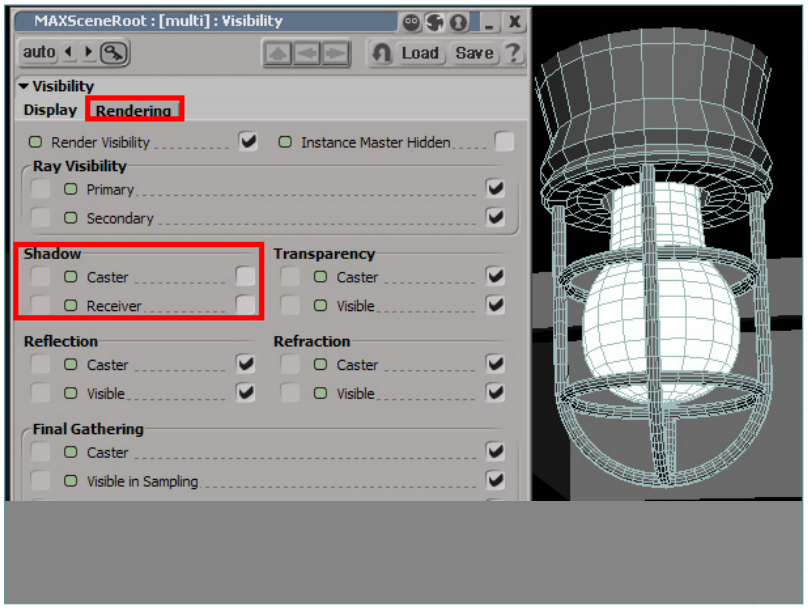

2. First of all, we need to make sure that the light bulb objects will not cast shadows. Select all the three components (light bulb, guard and base), click on the Selection button and double click on Visibility (Fig02).

Fig 02




3. In the properties page that appears, switch to the Rendering tab and disable Caster and Receiver in the Shadow section. Repeat this process for the other bulb light on the right (Fig03).

Fig 03



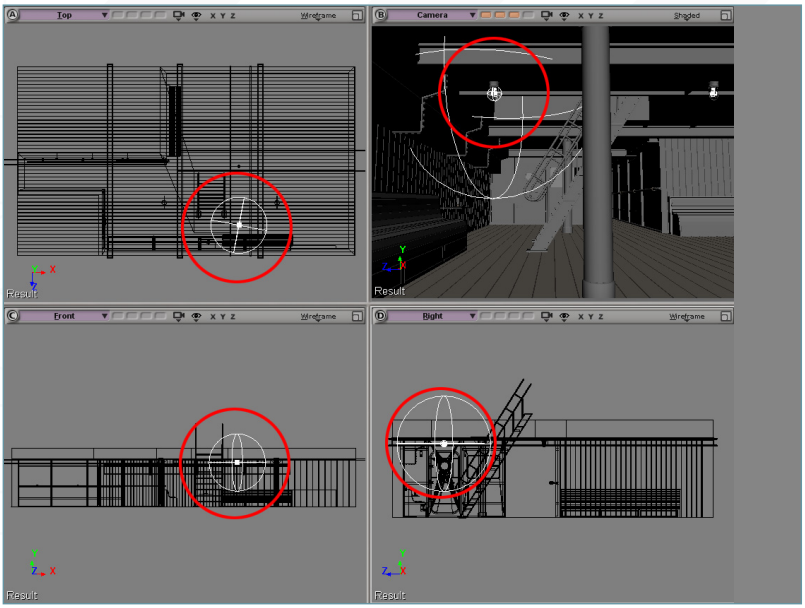



Fig 04

4. Now we can create the first Point light which will act as a light bulb. Create a new Point light and position it as shown in Fig04, just over the light bulb on the farthest left (Fig04).

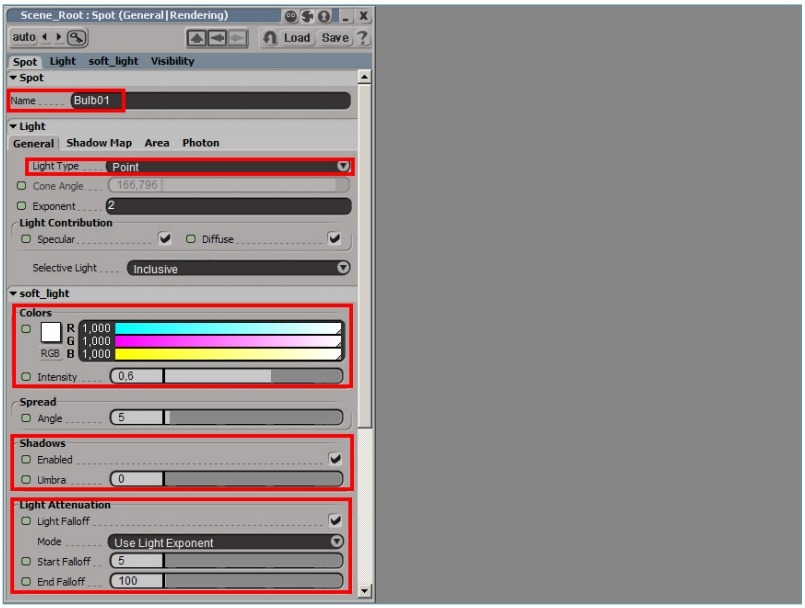



Fig 05

5. Open the Point light's property page and set its Intensity to 0,6. Leave the colour as pure white. Enable Shadows and set the Umbra value to 0. Enable Light Falloff and set the Start to 5 (Fig05).

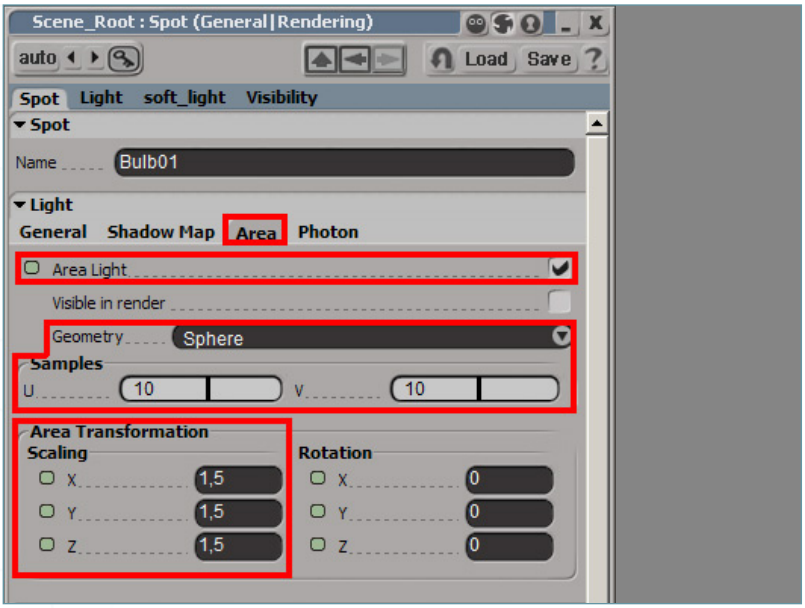
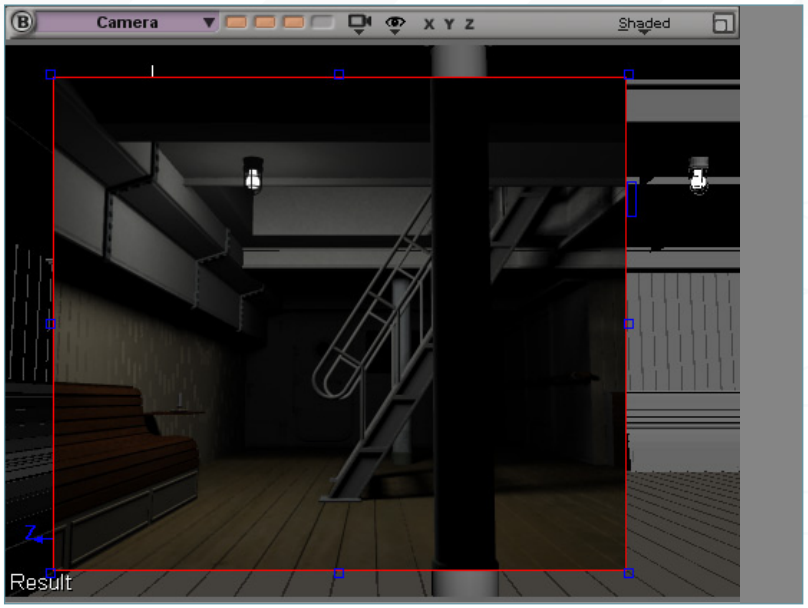



Fig 06

6. Now switch to the Area tab. Enable Area Light and change the Geometry type to Sphere. Set both the Sample values to 10. In the Scaling section, set all the three values to 1,5. This will give our light some nice soft area shadows (Fig06).

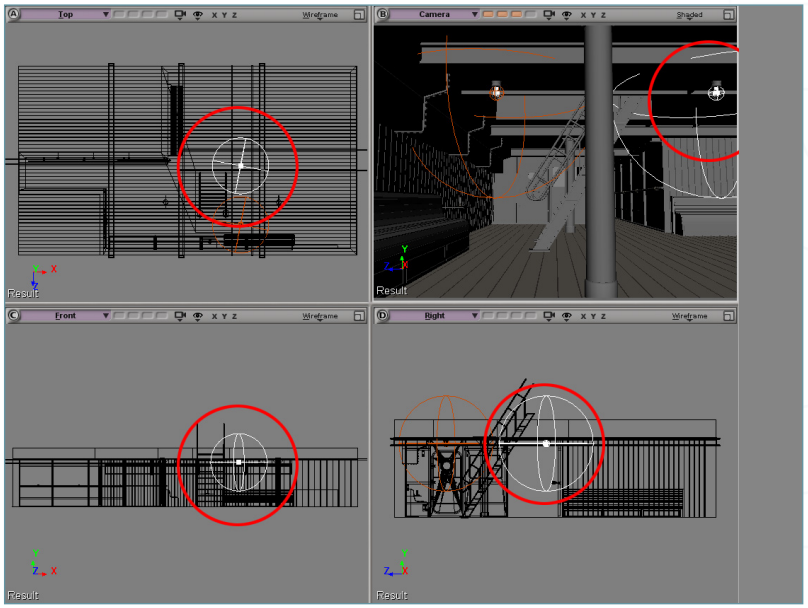
7. Make a quick render region test. If needed, adjust the area shadow's parameters and the light intensity (Fig07).

Fig 07



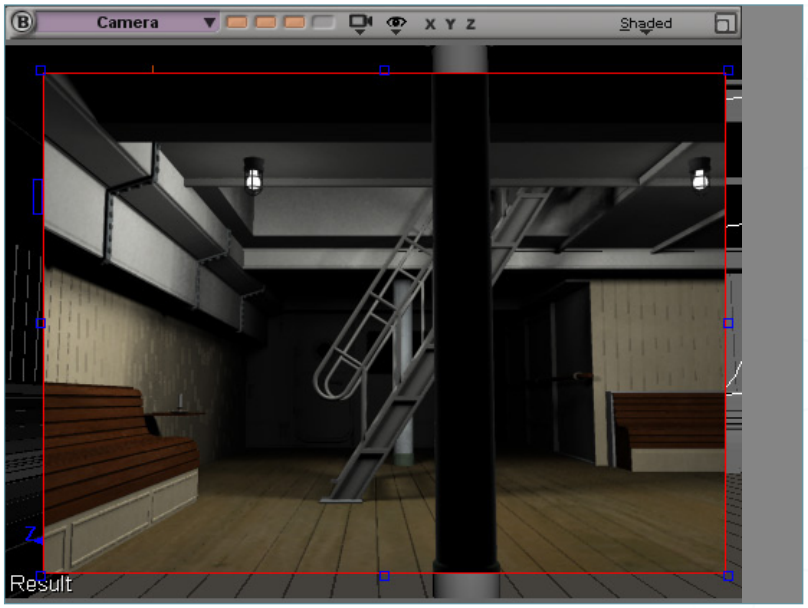

08. Duplicate the Point light and position it right above the second light bulb, on the right (Fig08).

Fig 08




09. Do another render region to see what's happening and to check the overall intensity of the lighting in the scene (Fig09).

Fig 09



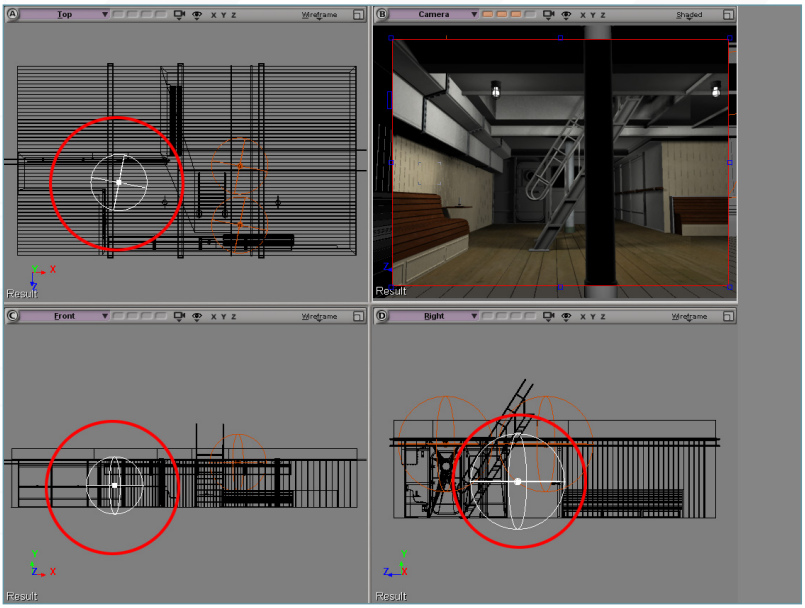



Fig 10

10. Now we need a third Point light in the back of the room, where it's much too dark. Duplicate one of the two Point lights and position it in the back of the cabin (Fig10).

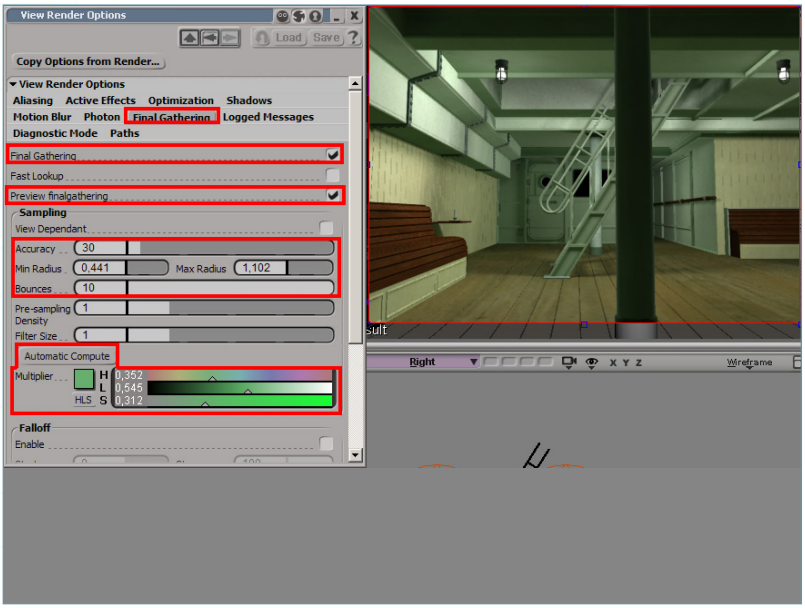



Fig 11

11. Open the render region property page. Switch to the Final Gathering tab and enable Final Gathering. Also enable Preview in order to get quick feedback of the FG solution whilst rendering. Set the Accuracy to a low value, like 30. (We'll increase the quality only for the final render.) Set the Bounces to 10 and the Multiplier colour to a medium green. Hit the Automatic Compute button to get some starting values for the Min./Max. Radius. Quick-render the scene again (Fig11).

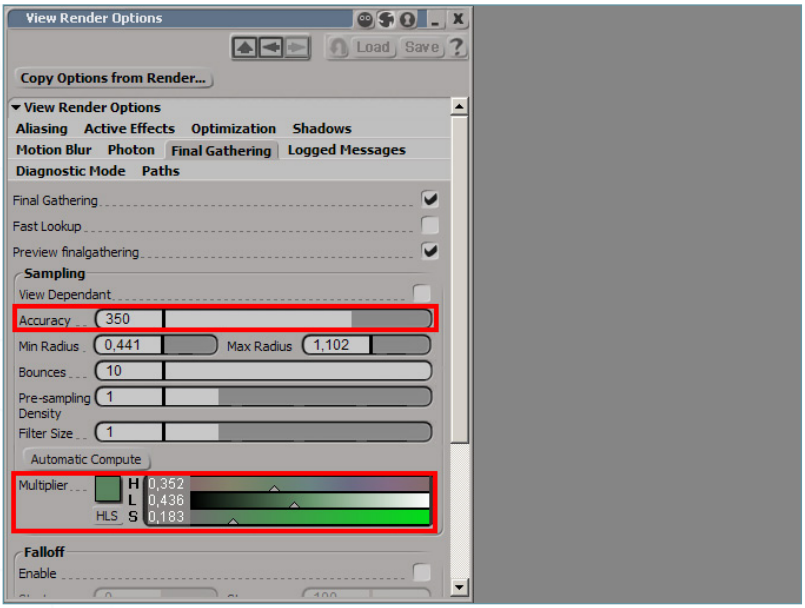
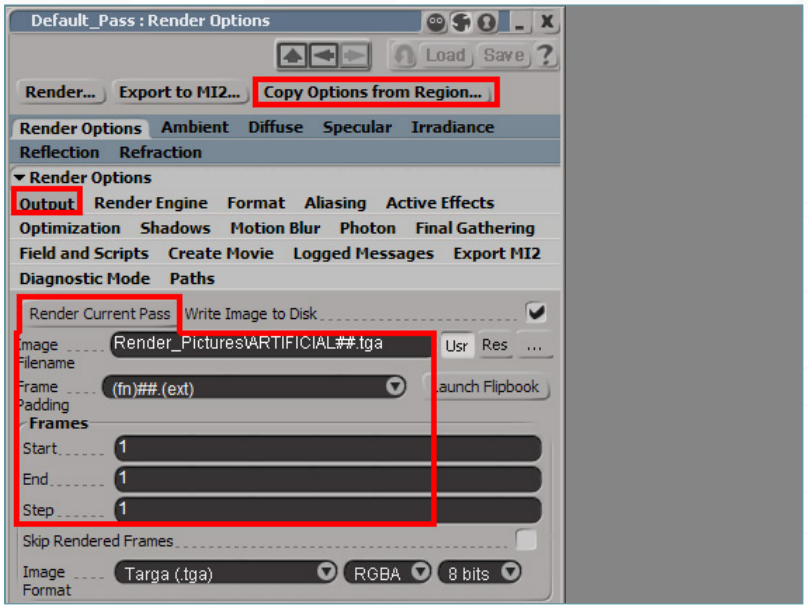



Fig 12

12. Once you're happy with the FG solution, you can increase the overall quality of the render. Set the Rays value to 350 and set the Multiplier colour to a darker, and less saturated, one (Fig12).

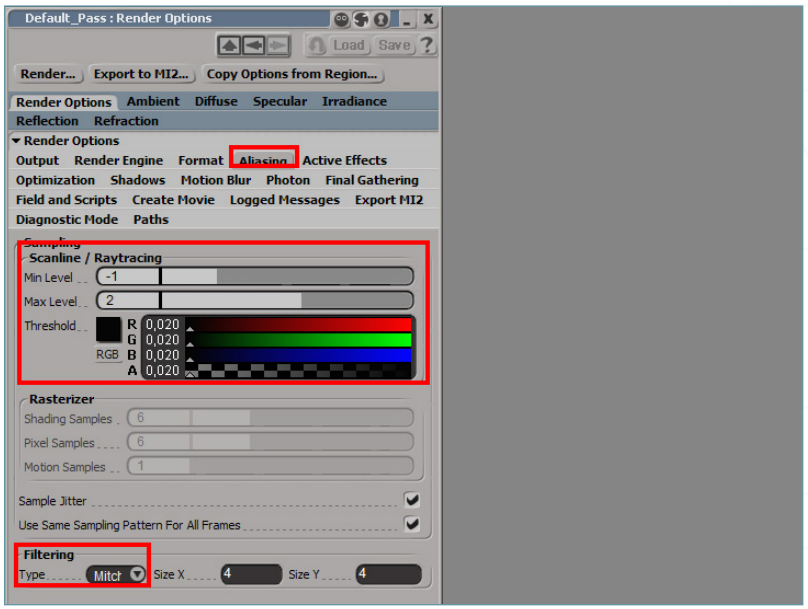
13. Open the Render property page (Fig13) and hit the Copy Options from Region button. This will transfer all the rendering parameters from the Render Region properties to the Render. In the Output tab, set a name for the picture and the number of frames you want to render. I suggest you use the .TGA file format to have the alpha channel information included with the rendered picture (Fig13).

Fig 13




14. Switch to the Aliasing tab. Set the Min./Max. Level values to -1/2. Set all the Threshold values to 0,02 and the Filter type to Mitchell.

Fig 14




15. In Fig15 you can see the final rendered image. Now we also need an Ambient Occlusion pass to composite it over the rendered picture in Photoshop.

Fig 15



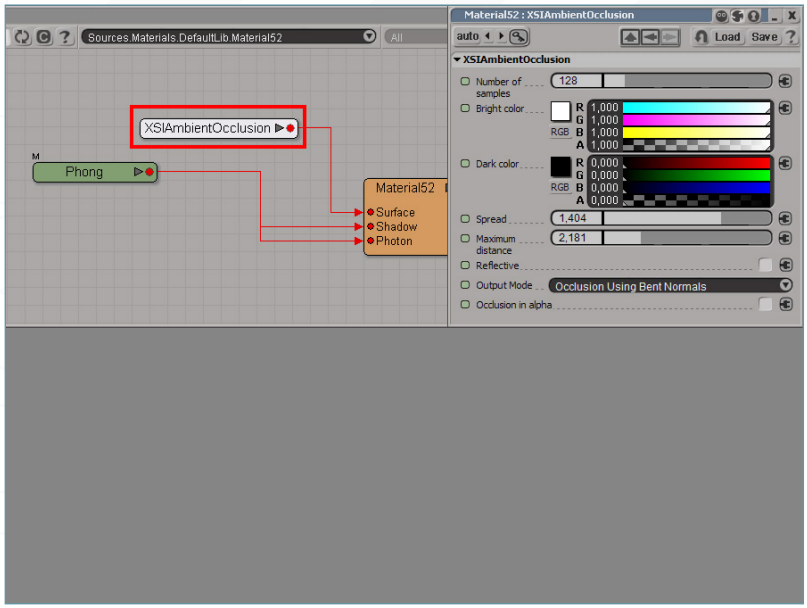



Fig 16

16. Open the ShipCabin_Part4_ARTIFICIAL_AO.scn scene file. In Fig16 you can see the AO shader that was created and assigned to every object in the scene. You can also see its parameters on the right of the image (Fig16).



Fig 17

17. Render the AO picture and save it (Fig17).

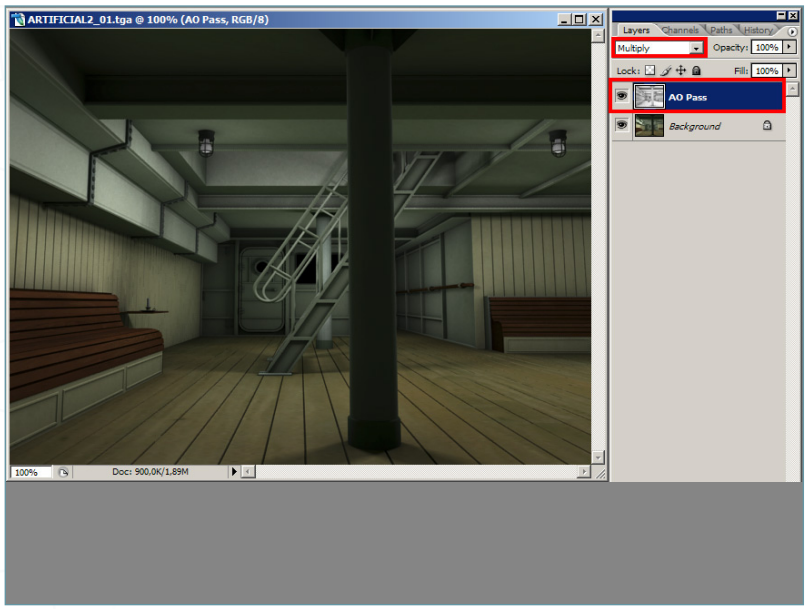
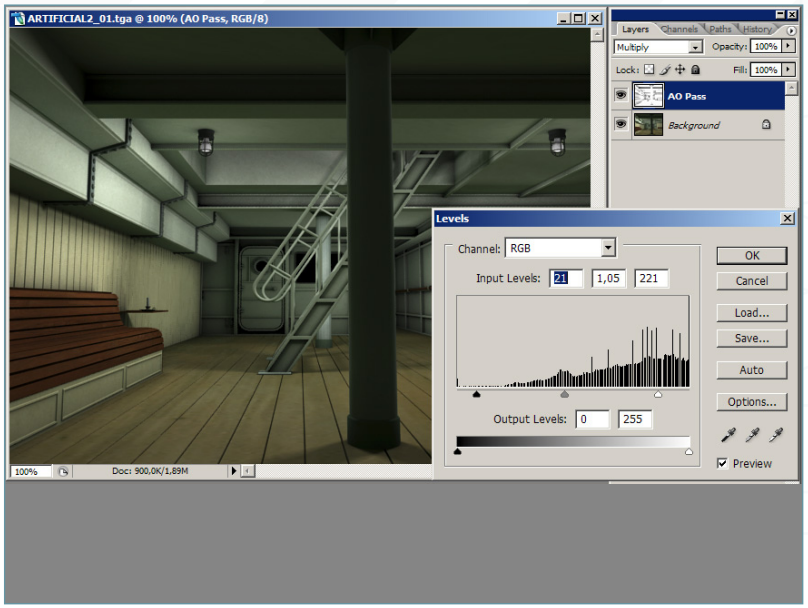



Fig 18

18. Open both the original render and the AO pass in Photoshop (or similar 2D application). Copy the AO pass and paste it over the original rendered picture. Change the AO pass' blending mode to Multiply (Fig18).

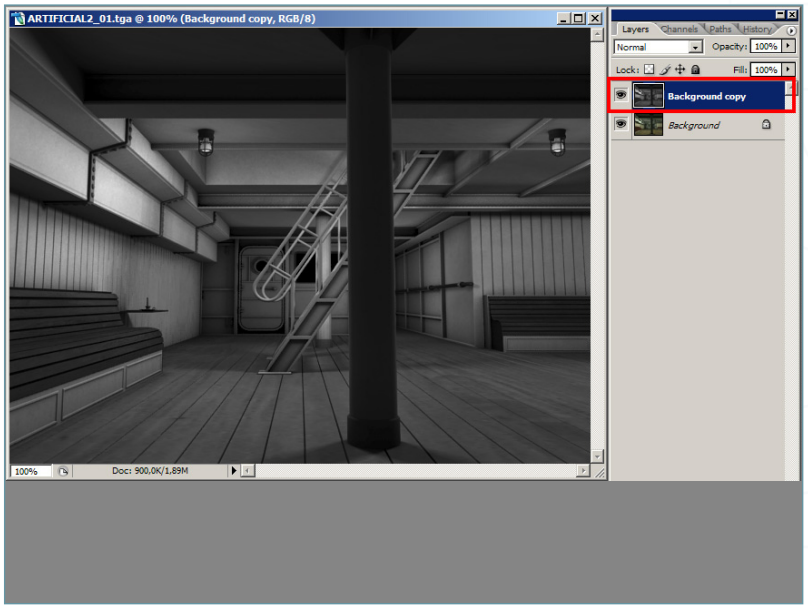
19. Use the Levels tool to adjust the contrast; try to enhance the details without making the image too dark (Fig19).

Fig 19



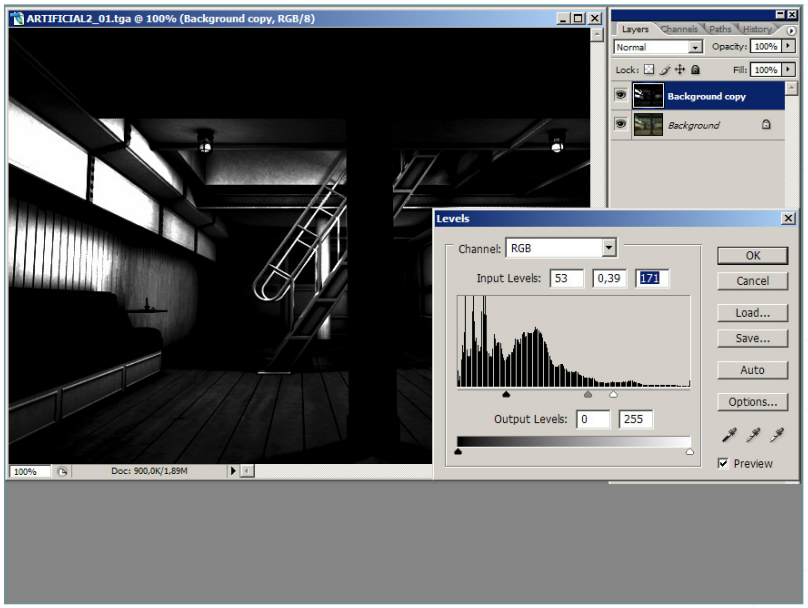

20. Flatten all the layers together and create a copy of the Background layer. Desaturate it (Fig20).

Fig 20




21. Use the Levels tools to expose the areas with more light (Fig21).

Fig 21



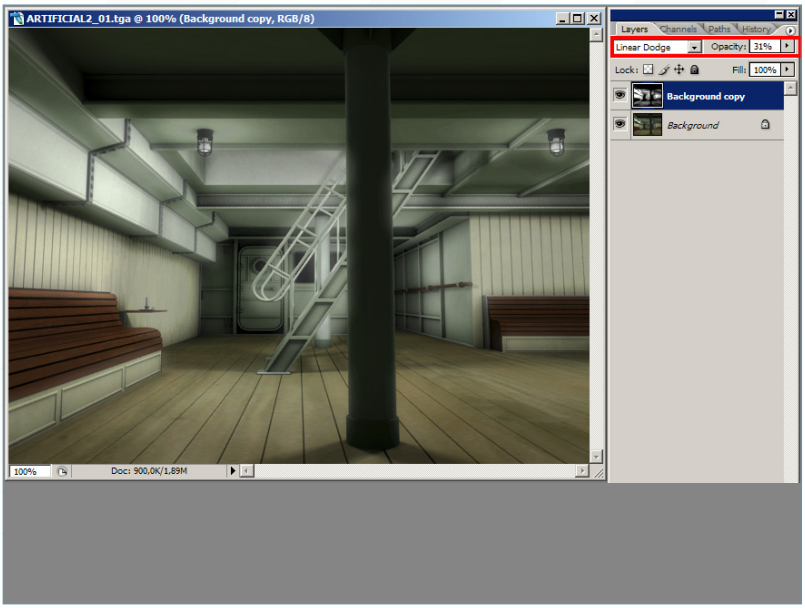



Fig 22

22. Change the blending mode to Linear Dodge and the Opacity to 31% (Fig22).

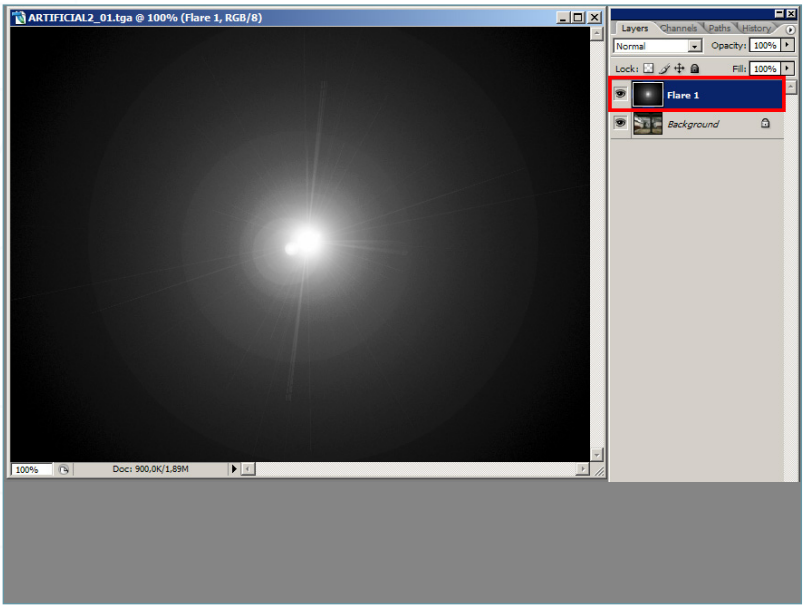



Fig 23

23. Flatten all the layers again. Now create a new blank layer and fill it with pure black. Use the Lens Flare filter to create a flare effect (Fig23).

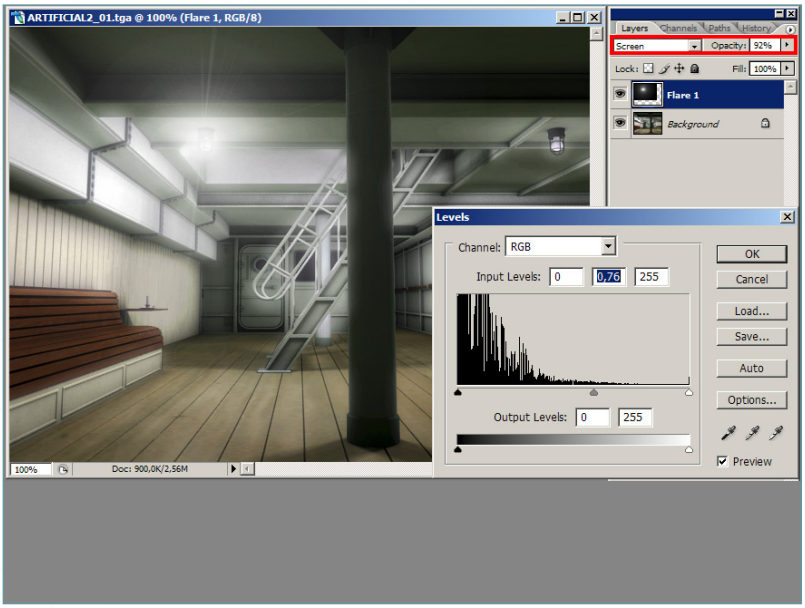
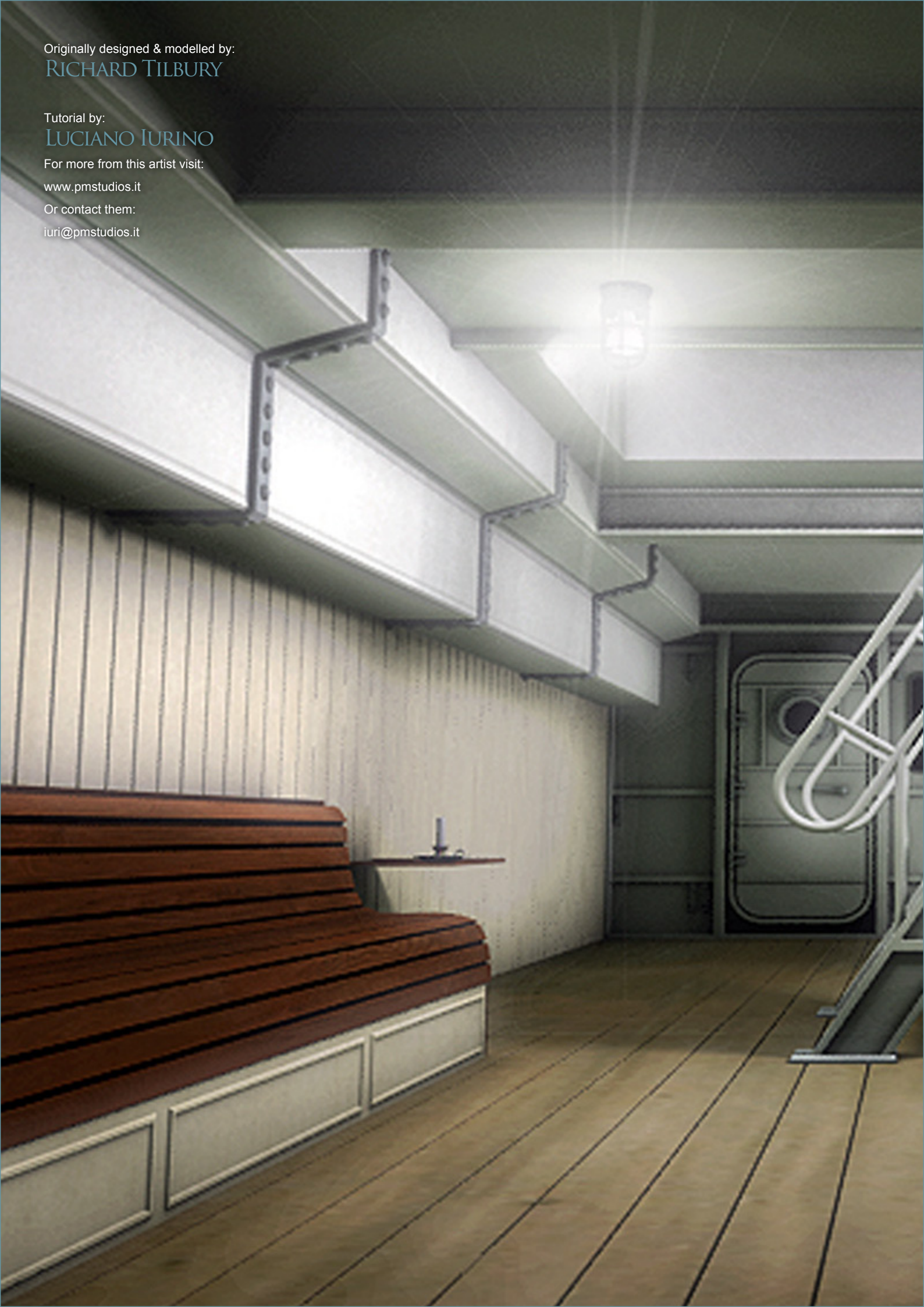



Fig 24

24. Scale and position the flare layer over the first light bulb (on the left), as shown in Fig24. Then duplicate the flare layer and position it over the second light bulb (on the right) (Fig24).



Originally designed & modelled by:
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Tutorial by:
LUCIANO IURINO
For more from this artist visit:
www.pmstudios.it
Or contact them:
iuri@pmstudios.it


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# Eva Wild

## Female Characters Creation

### Introduction:

The 'Eva Wild Series' – Our aim in this series is to provide comprehensive lessons to produce a complete fully rigged, textured and anatomically correct female character. This series fits well into 3 DVDs with 3 separate professional 3ds Max instructors taking you through each if their specialties in very detailed step by step processes making this training suitable for artists of all levels.



### Part 1 - Modelling:

- Complete step by step modelling of the Eva Wild character.
- Teaches the importance of studying human anatomy.
- Provides clear diagrams showing muscle flow and bone structure.
- 14 hours of comprehensive training.
- Suitable for artist of all levels.



### Part 2 - Texturing, Mapping & Clothing:

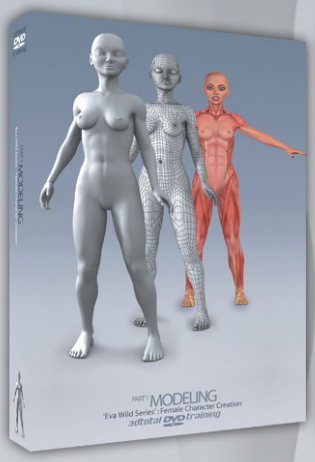
- Complete step by step texturing process of the Eva Wild character.
- Modelling and Texturing of Eva Wild garments.
- Lighting the character.
- 4 hours and 47 mins of comprehensive training.
- Suitable for artist of all levels.

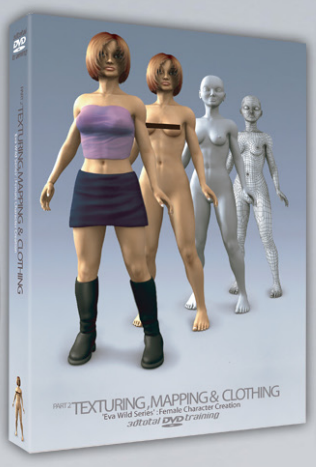


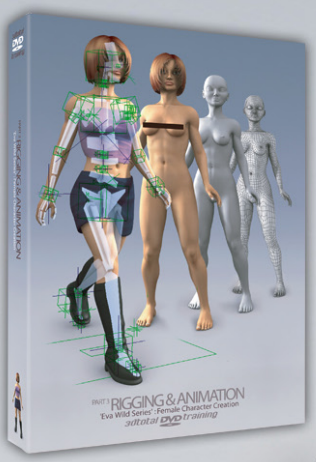
### Part 3 - Rigging & Animation

- Complete step by step of setting up a fully animatable rig for the Eva Wild character.
- Creating a walk Cycle.
- Creating a simple face morph.
- 7 hours and 43 mins of comprehensive training.
- Suitable for artist of all levels.






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